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The AMERICAN ARCHITECT AND BUILDING NEWS

Regular Edition

Vol. XC. DECEMBER 8, 1906. No. 1615.

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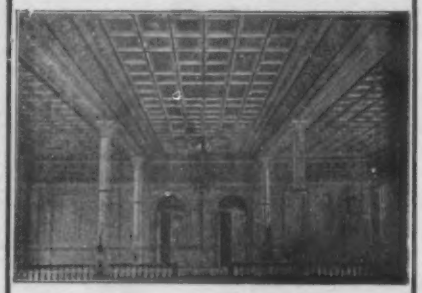

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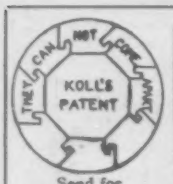

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SOCIETIES

A. I. A. CONVENTION.

The next convention of the American Institute of Architects, to be held in Washington City, January 7, 8, and 9, 1907, will commemorate the fiftieth anniversary of the institute, founded in 1857. It is proposed to make this a notable meeting. A bronze tablet containing the names of the founders of the institute will be unveiled in The Octagon, commemorating the occasion. During this meeting the institute will inaugurate the custom of presenting a gold medal for distinguished merit in architecture. The first medal will be presented to Sir Aston Webb, the architect of the Victoria Memorial, who received the gold medal of the Royal Institute of British Architects and knighthood during the past year. This meeting will also be the occasion of a formal banquet, at which will gather those distinguished in the fine arts, prominent government officials, representatives of educational institutions, and men of literary fame. As ceremonial and social events will occupy the time of this meeting, no formal papers will be read, but the routine business and commemorative exercises will occupy the time of the delegates.

PHILADELPHIA CHAPTER, A. I. A.

The Washington Chapter, American Institute of Architects, held its monthly meeting, November 2, at the headquarters in the Octagon House. Routine business was transacted, including reports of committees and the discussion of subjects already before the Chapter at previous meetings. No new topics were brought before the body.

WASHINGTON, D. C., CHAPTER, A. I. A.

At the annual meeting of the Philadelphia Chapter, American Institute of Architects, held in the T-Square Club, the following officers were elected to serve for the ensuing year: *President,* James B. Jamieson; *First Vice-president,* David Knickerbacker Boyd; *Second Vice-president,* John Molitor; *Treasurer,* William C. Prichett, and *Secretary,* Arnold H. Moses.

THE ATELIER DETROIT.

An architectural club, known as the Atelier Detroit, has been organized, and will carry out courses of study and work under the auspices of the Society of Beaux-Arts Architects of New York.

WASHINGTON CHAPTER, A. I. A.

At its twelfth annual convention and banquet at the Rainier Club, Seattle, November 7, the Washington Chapter of the American Institute of Architects elected officers for the coming year. The officers follow:

President, James Stephen; *First Vice-president,* A. W. Spalding; *Secretary,* John Graham; *Treasurer,* James H. Schack.

THE EIGHTEEN CLUB.

The following officers of the Toronto Architectural Eighteen Club were elected at its annual meeting on the 13th ultimo. *President,* Mr. Edeñ Smith; *First Vice-president,* Mr. C. D. Lennox; *Second Vice-president,* Mr. J. C. B. Horwood; *Third Vice-president,* Mr. A. H. Chapman; *Secretary-treasurer,* Mr. J. P. Hynes.

The meeting also decided to remove the present restriction on the number of members, in order to admit a number of architects eligible for membership who could not be elected until this part of the constitution should be changed.

The idea of obtaining special incorporation from the Ontario Government for the Club was also discussed at length and will likely be taken up at once by the new executive.

ILLINOIS CHAPTER, A. I. A.

The Illinois Chapter of the American Institute of Architects held its regular monthly dinner and meeting November 12, at the Art Institute. A committee composed of President A. F. Woltersdorf, Peter B. Wight and Irving K. Pond selected delegates to the annual convention of the American Institute to be held in Washington January 7, 8 and 9, as follows: President A. F. Woltersdorf, George C. Nimmons, D. H. Perkins, Howard Shaw and Samuel A. Treat. Alternates: Norman S. Patton and George Beaumont. W. B. Mundie, Vice-president of the American Institute, and Irving K. Pond, are delegates ex-officio.

SOUTHERN CALIFORNIA CHAPTER, A. I. A.

At the annual meeting of the Southern California Chapter of the American Institute of Architects the following officers were elected:

President, Myron Hunt; *Vice-president,* C. H. Brown; *Secretary,* Fernand Parmentier; *Treasurer,* August Wackerbath. These officers, together with A. F. Rosenheim, Octavius Morgan, and J. Lee Burton, constitute the *Board of Directors.*

The following *Standing Committees* were appointed: *Membership,* S. P. Hunt, A. B. Benton, T. Walsh; *Entertainment,* F. D. Hudson, F. L. Roehrig; *Press,* J. P. Krempel, A. F. Rosenheim, and F. Parmentier.

PERSONAL MENTION

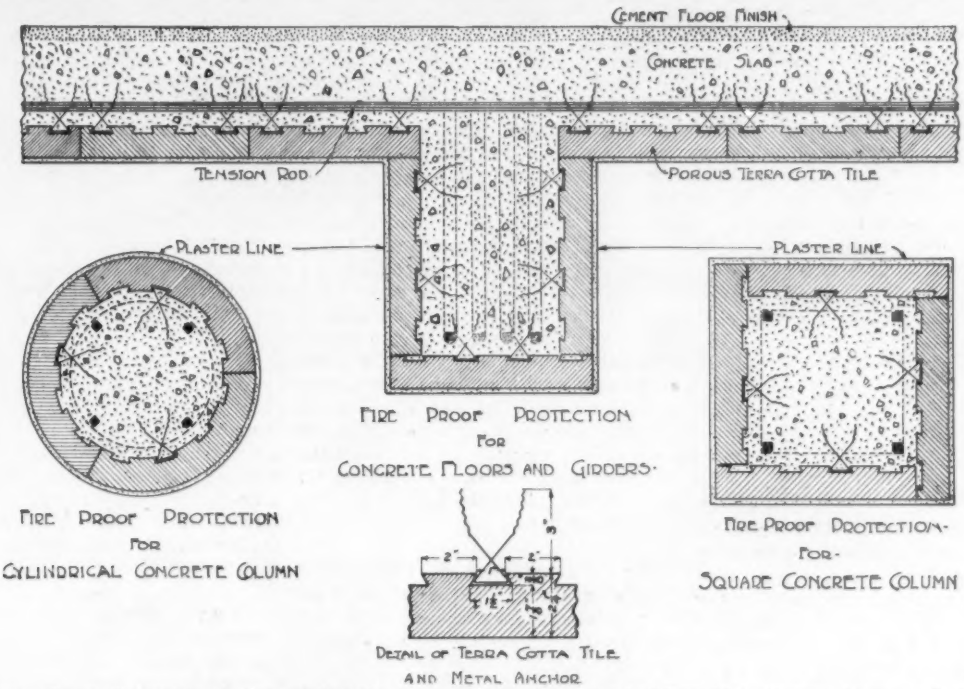
New York, N. Y.—Franklin Baker Lefferts of the firm of architects of Lefferts & Smith, 27 East Twenty-second Street, died on Friday, November 9, in Roosevelt Hospital. He was 28 years old and a graduate of Columbia University.

Reading, Pa.—Mr. Midgely Walter Hall, formerly of Reading, now of New York, won a prize of $500 given by the Garden City Corporation of New York, for the best design for a double house to be erected at Garden City. There were forty other competitors.

Wilkes-Barre, Pa.—Mr. F. S. Olds, architect, has formed a partnership with Mr. F. W. Puckey. Office in the Coal Exchange Building.

El Paso, Tex.—Mr. S. E. Patton has filed a petition in bankruptcy, his liabilities being $5,556.

Detroit, Mich.—The dissolution of the firm of Mueller & Mildner, for many years with offices on the third floor of the Fergu-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First, to protect those members against weakening and consequent collapse during a fire, and

Second, to make this protection so thorough that the structural parts will be equally as strong after the fire as they were originally.

In the use of steel for structural purposes the second essential is secured if the members be so well protected that they will not be distorted or collapse during the fire. Because steel (or iron) when heated and cooled are as strong after cooling as originally. Steel and iron are not in themselves fireproof, although when first used for structural purposes they were generally believed to be so, and are still so considered by many persons in spite of the conclusive evidence to the contrary.

It is our belief (and we think it has been clearly demonstrated) that there is no material in practical use which is satisfactory as a structural material for large buildings and at the same time proof against fire unless protected by some other fireproof substance.

Reinforced concrete has been held to answer the above requirements and is being generally used with the idea that it does so. Numerous tests have shown that reinforced concrete structures are apparently not damaged by fire. Except in cases of extreme heat they usually hold their position.

In nearly all such cases, however, the structure has been found to be greatly weakened. After the Baltimore conflagration the majority of concrete floors which stayed in place during the fire had to be removed and rebuilt on account of their weakened condition. No scientific data as to the cause of this, however, has ever been secured except the tests by Prof. Ira H. Woolson, as published in the *Engineering Record* of July 21, 1906, and those published in the *Engineering News* of July 13, 1905, in which it is clearly shown that concrete under a moderate temperature loses from one-third to two-thirds of its crushing (carrying or loading) strength and, unlike steel or iron, does not regain that loss.

At our own testing station in Chicago a fire, load and water test was recently made on reinforced concrete columns, and this data, with all other information on the subject, clearly shows that after a fire concrete structural members have entirely lost their factor of safety, at least, although no great damage may be apparent.

It demonstrates that such structures cannot preserve their strength when attacked by fire, unless substantially protected by fireproof material, and that such protection is necessary for every structural material now in use.

We illustrate herewith detail of method for fireproofing reinforced concrete girders, floors and columns, and solicit the opportunity to submit plans and estimates for fireproofing the structural parts of concrete buildings.

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son Building, is announced by the withdrawing partner, R. Mildner, who has formed a partnership with Adolph Eisen, under the firm name of Mildner & Eisen, for the practice of architecture. The new firm has opened offices at 1017-1018 Hammond Building. Mr. Eisen was formerly for many years architectural draughtsman for Mueller & Mildner, but of late has been in the employ of Albert Kahn.

San Diego, Cal.—Mr. J. B. Stannard, of the firm of Clements, Stannard & Blachmann, has severed his connection with the firm, although the formal papers of a dissolution of partnership may not be filed for a month yet. It is the intention of Mr. Stannard to open an office for himself in the city.

Cleveland, O.—A class in architectural designing, modeled on the Parisian plan, is the latest educational feature in the Central Y. M. C. A. Institute. The class is known as the "Atelier," and has twenty members, nearly all architectural draughtsmen. Their instructors are "patrons"—three well-known Cleveland architects, who received their technical training in the French capital. They are Abraham Garfield, Milton Dyer, and Charles Schneider.

Boston, Mass.—Mr. William F. Pope, a Boston sculptor, died at the Massachusetts Homœopathic Hospital, October 21, after a brief illness, of pneumonia. Mr. Pope was one of the most promising of the younger American sculptors, and although he took up his work in middle life, art critics recognized in it that painstaking quality and that originality of conception which amounts to genius. Mr. Pope, who was born in Fitchburg in 1865, as a young man was employed in the office of the Manufacturers' Mutual Insurance Company of this city, but his devotion to art led him to leave an excellent position and go to Paris, where he studied under Julian. One of his earlier works, a bronze "Breton Fisherman Drawing His Nets," received much attention and was honorably mentioned in the Paris Salon. He returned to America two years ago, and was recently in the competition for a memorial to the late Mayor Collins. His latest work was on a portrait relief of Mary G. Baker Eddy.—*Boston Transcript.*

Athens, O.—Messrs. Anderson Brothers, architects, made an assignment October 23.

New York, N. Y.—Arthur Clifford Babson, one of the first men to import cement into this country, died last week at his residence, Stonycroft, on Ridgewood Road, South Orange. He had been ill for several months. Mr. Babson was a partner in the firm of Sinclair & Babson. He was born in Boston in 1848.

NOTES AND CLIPPINGS.

The Megatherium and the Paris Métropolitain.—The first problem which the engineers of the Paris Metropolitan Railway had to deal with was that of the geological structure of the ground on which Paris is built. In this connection there is no doubt that they had a much easier task than the engineers of either New York or the London subterranean railway, and owing to the special nature of the strata through which the borings had to be made they were able to decide in favor of constructing the line at a relatively small distance from the surface. Paris is built on a plain, encircled by the heights of Passy, Montmartre, Belleville and Ménilmontant to the north and west, and of Montparnasse and the Montagne Ste. Geneviéve to the south and east. The general character of the geological strata is sandy or chalky. Where sand is found it is generally fine and nearly always impregnated with water. The difficulties of construction in the case of sand, especially when tunneling in the neighborhood of houses, are great, but the chalk strata are in every way favorable to the engineer. It is interesting to note that when excavating at the angle of the Avenues Bosquet and Le Bourdonnais, at a stone's throw from the Eiffel Tower, in a calcareous soil, the workmen came across fossil bones of the megatherium. These antediluvian remains are now exhibited at the Paris Zoological Museum.—*"C. I. B." in N. Y. Tribune.*

Ptolemy's Lighthouse.—The first lighthouse ever erected for the benefit of mariners is believed to have been built by the famous architect Sostratus, by command of Ptolemy Philadelphus, King of Egypt. It was built near Alexandria, on an island called Pharos. Ptolemy has been much commended by some ancient writers for his liberality in allowing the architect to inscribe his name instead of his own. The inscription read "Sostratus, son of Dexiphanes, to the protecting deities, for the use of seafaring people." This tower was deemed one of the seven wonders of the world, and was thought of sufficient grandeur to immortalize the builder. It appears from Lucian, however, that Ptolemy does not deserve any praise for disinterestedness on this score, or Sostratus any great praise for his honesty, as it is stated that the latter, to engross in after times the glory of the structure, caused the inscription with his own name to be carved in the marble, which he afterwards covered with lime and thereupon put the king's name. In process of time the lime decayed, and the inscription on the marble alone remained.—*Dundee Advertiser.*

Gardens of Villa Borghese to be given up to Exhibition.—Every American who has visited Rome will be concerned to learn that the superb gardens of the Villa Borghese, which are celebrated throughout the civilized world and are one of the glories of the Eternal City, are about to be cut up in order to furnish a site for the huge buildings of the International Institute of Agriculture. The government purchased the villa and the grounds from the bankrupt chief of the Borghese family four years ago at a relatively nominal price, preventing his disposal thereof to foreign multi-millionaires, who were willing to pay for the villa and grounds sums that would have extricated the prince from all his financial embarrassments.

The State turned over the villa to the City of Rome, to be used as a park and museum, reserving to itself the right to devote at any time that it saw fit a large part of the park to the construction of public institutions. It has now decided to make use of this stipulation to erect the new Institute of Agriculture, and has chosen for the site thereof, not any outlying corner of the grounds, but some of the most beautiful portions of the gardens and park, which for more than three centuries have been one of the most attractive features of Rome. They date from Pope Paul Borghese, who built the villa and laid out the grounds, which from that time forth were thrown open at least three days a week to the people of Rome and to foreign visitors. The villa, a gem in itself, all frescos, busts, statues and decorations, set in the midst of trees hundreds of years old, shaded avenues, moss-grown fountains and marble and bronze statuary, the tones of which are mellowed by age, is unique, not only in Italy, but in Europe. The idea of destroying the beauty of these exquisite gardens by erecting a brand new exhibition building in the immediate proximity of the villa seems little short of vandalism, and protests addressed to the Italian government and to the municipality of Rome are pouring in from all parts of art-loving Europe.—*Marquise de Fontenoy, in the New York Tribune.*

Louvre Robbery.—Another theft was discovered in the Louvre, November 9, that of a leaden votive Græco-Phœnician figure of a woman, twelve centimetres in height, found in Spain. It is of more archæological interest than actual value.

Balmoral Castle Due to an English Miser.—John Camden Neild, whose magnificent bequest to Queen Victoria supplied the funds out of which the Prince Consort built the present Balmoral Castle, deserves a place among the great misers and was as remarkable a man as any of them. He was educated at Eton and Trinity College, Cambridge, and was a barrister at Lincoln's Inn. At the age of thirty-four his father's death placed him in possession of a fortune of £250,000, and from that moment he became a confirmed miser.—*P. T. O.*

The Destructive Force of Waves.—Instances of the power of waves, and descriptions of some attempts to measure or calculate it are given in *La Nature* by R. Bounin. Says this writer:

"The power of waves is . . . the sum of two efforts, one dynamic and due to the orbital movement of the water particles, the other static, and dependent on the height of the centre of gravity of the mass raised above its normal position. Theory and observation seem to show that the total power of waves is divided equally between these static and dynamic effects.

"If a body of water meets the wall of a structure, there is a shock, and this is most violent at the water surface, diminishing with the depth. . . . At the moment of meeting, jets of water rise sometimes to very great heights. . . . Thus at the old Eddystone lighthouse the waves sometimes rose to a height of seventy-five feet, overtopping the cupola that surmounted the lantern. At the jetty at Cherbourg breakers 115 feet high have been seen. . . . When these fall with accelerated speed they often, even in deep water, undermine the structure and cause it to fall. This is notably the case with sea-walls. . . . and it is also true of the piles of rock that serve as the foundations of jetties. There are also pro-

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duced, at the moment of shock, reflex waves, which, by their interference with those coming up behind, neutralize some and augment the intensity of others, resulting in concentrated shocks of great power.

"The maximum power of waves is a subject that has long been studied, without being positively settled. It is a very complex one, like that of the effect of wind on structures. This power is undoubtedly very great, however, in certain cases. Thus, at the breakwater of the port of Wick, on the northeastern coast of Scotland, a monolith of concrete weighing 1,350 tons was displaced in 1871, during a storm, and overturned on the supporting rock masses. In 1877, at the same breakwater, another monolith of 2,600 tons, that replaced the former, was also displaced. At the Cherbourg jetty in 1836, during a storm, blocks of stone weighing four tons were thrown into the sea below, and huge concrete blocks were moved twenty metres (sixty-six feet), some being completely overturned. During the building of the Dhuheartoch lighthouse in 1872 fourteen stone blocks weighing two tons each and locked together . . . were thrown into the sea from a height of fifty feet above its level. . . . Many other instances of this kind could be given.

"Starting from such facts, attempts have been made to calculate the power of the waves that displaced these masses, but the results have not been conclusive. Such calculations depend on hypotheses regarding friction and the strength of cements, and on formulas of the strength of materials whose application appears to be doubtful in the case of such enormous forces."

In 1842, the writer goes on to say, the English engineer, Thomas Stevenson, attempted to measure these forces with an instrument that he devised for the purpose, consisting of pistons acting on powerful springs. This was able, however, only to give the maximum pressure of a wave at a given moment and on a very small element of surface. More recently, Captain Gaillard, of the United States Army, has constructed improved instruments with which he has measured both the static and the dynamic effects of waves, chiefly in Lake Superior. His conclusion is that the effect of a mass of water on a vertical wall is the same as that of a current of water with the same surface as that struck, having the speed of propagation of the wave plus that of the orbital motion of its particles. The writer suggests also that a careful measurement of the length, height, speed, and periodicity of waves would enable us to make a comparative table of their power, though this could not be given absolutely in pounds or tons. Something like this is now being done by the French Lighthouse Administration. Mr. Bounin goes on to say:

"We thus see how difficult it is to get at the power of waves exactly. Stevenson, at the conclusion of his numerous experiments, stated that the maximum pressure at Skerryvore lighthouse, Scotland, in violent tempests, was thirty tons to the square metre. . . .

"Mr. Quinette de Rochmont, Inspector General of Roads and Bridges, in his work on maritime engineering, estimates that on the coast of France and Algeria the pressure is not over twenty tons. Waves producing pressure of fifteen to eighteen tons are rare, he says, and occur only on the rocky coasts of the Atlantic. He adds that when the wave breaks on a gentle slope its power would appear not to exceed eight to ten tons to the square metre. Finally, in most of our ports, damage to masonry structures may be caused by pressures of four to six tons. These figures, of course, apply only to the case of direct shock, for in oblique shock, which is more frequent, the force of the water is much less."

BUILDING NEWS.

(The editors greatly desire to receive information from the smaller and outlying towns as well as from the larger cities.)

Allegheny, Pa.—The city administrators are said to be contemplating the issue of $500,000 bonds for erecting a city building.

Allentown, Pa.—The Allentown Portland Cement Company has been incorporated with a capital of $2,000,000. The company will erect a Portland cement plant six miles north of this city.

Altoona, Pa.—It is reported that the Board of Education is contemplating the erection of a $100,000 school building.

Atlanta, Ga.—Atlanta Athletic Club, it is stated, is arranging for the erection of clubhouse.

Plans are being prepared for the auditorium, church, and infirmary to be erected by the Tabernack Realty Company. Cost, $150,000.

The Knights of Pythias, it is stated, are

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contemplating the erection of a Pythian castle hall, to cost $75,000. Carlos Lynes is chairman of committee.

Battle Creek, Mich.—The Board of Education has decided to erect a high school building at an estimated cost of $150,000.

Bellingham, Wash.—Preparations are being made for the construction of a six-story building at East Holly and Elk Streets to cost $250,000.

Berkeley, Cal.—Reports state that a $100,000 law library will be erected for the University of California. John Galen Howard, architect.

Berlin, Ont., Can.—A new hotel, it is stated, will be erected here to cost $200,000. F. S. Baker, architect, Toronto, has prepared the plans.

Billings, Mont.—Col. A. L. Babcock and others, it is stated, will erect a modern opera house, 60x120, fireproof, to cost $60,000. Architect Houghton, of Seattle, is preparing the plans.

Geo. Benninghoff contemplates erecting a six-story office-building to cost $150,000.

Binghamton, N. Y.—The Board of Education has instructed Commissioner Cortlandt A. Wilber, chairman of the committee, to consult with an architect regarding plans for the proposed Robinson Street School Building.

Birmingham, Ala.—The Birmingham Railway, Light & Power Company is considering the erection of an immense power plant. Estimated cost, $1,500,000. N. M. Unrath, Chief Engineer.

Bogalusa, La.—The Great Southern Lumber Company will erect a $100,000 hotel, a $15,000 school building, a $10,000 theatre, and a $16,000 hospital building in Lumbertown, which it has established. General offices, 950 Ellicot Square, Buffalo, N. Y.; F. H. Goodyear, President.

Brooklyn, N. Y.—Plans have been prepared by R. T. Rasmussen, architect, 30 Graham Avenue, Brooklyn, for the erection of a three-flat building on South Third Street, Brooklyn, for P. Pelcyger, 110 Hart Street. Estimated cost, $120,000.

Reports state that the trustees of the new $1,000,000 Academy of Music in Brooklyn have authorized the signing of the contracts for the construction of the building.

Camden, N. J.—The Porcelain Trust, it is stated, will erect a large plant here, at a cost of $500,000.

Carthage, Ill.—Reports state that bonds of $125,000 were voted for the erection of a new court house.

Chanute, Kan.—The Santa Fe Railroad Company will erect additional shops at Chanute, to cost about $175,000. W. H. Andrews, of Pittsburg, Pa., is President and General Manager.

Charleston, S. C.—R. Thomas Short, of New York, N. Y., it is stated, will have specifications ready in about sixty days for the police station which is to be erected at a cost of $60,000. Contractors will have thirty days after that in which to submit bids.

Charlotte, N. C.—Press reports state that the Southern Power Company, of Charlotte, will soon commence work on the construction of two new power plants, one at Ninety-nine Islands on Broad River, six miles south of Blacksburg, to produce 16,000 horsepower; the other at Rock Creek, two miles below the Great Falls Station, on Catawba River, to produce 30,000 horsepower; total cost of work, $3,000,000.

Chattanooga, Tenn.—Plans have been prepared, it is stated, by Adams & Alsup,

33 Chamberlain Building, for the erection of a three-story apartment building, 110x136 feet, to be known as the Lenora Building. Cost, $50,000.

CHEROKEE, IA.—D. W. McNeal, City Clerk, will receive bids until 8 P. M., December 18, for the erection of a city building, of brick or artificial stone.

CHICAGO, ILL.—Work will soon be started on the large new apartment house which is to be built at Evanston Avenue and Airdrie Place for A. L. Heagstedt, 1805 Briar Place. F. V. Newell, 78 La Salle Street, is the architect, and the building will cost about $75,000. Designs show a three-story building, covering an area of 100x100 feet, to be of brick and stone with composition roofing.

It is reported that plans of Morgan & Dillon, architects, have been adopted for the erection of a $200,000 Masonic Temple.

Press reports state that George Beaumont, architect, 115 Dearborn Street, and Richard E. Schmidt, architect, 172 Washington Street, have submitted plans to Chief of Police Collins, City Hall, for a police station to be built in the downtown district on a site which is yet to be selected. The plans call for a ten-story building, 120x139 feet, of fireproof steel construction, with probably stone exterior, having steam heat, electric light, and is estimated to cost $650,000.

Alexander W. Hannah, 2051 Sheridan Road, it is reported, has leased the property on the southeast corner of Halsted and Madison Streets, and proposes to erect thereon a fireproof building, to cost $150,000.

The Ancient Order of Hibernians of Cook County contemplate the erection of a building to contain stores, offices, lodge halls, and a gymnasium, at Ogden Avenue and Leavitt Street. It will probably be four stories high, 116x150 feet ground dimensions, and will cost $100,000.

W. C. Armstrong, Chicago, Ill., it is reported, has secured the contract to erect the terminal station for the Chicago & Northwestern Railroad; probable cost, $20,000,000.

Architect Henry Wittekind, 85 Dearborn Street, is taking figures on a store and apartment building to be built at the northeast corner of Lincoln Avenue and Grace Street for August Peters. It will be three-story, 75x135 feet, have pressed brick, iron and plate glass fronts, composition roof, oak finish, marble wainscoting, marble and tile floors, and cost $50,000.

Architects Nimmons & Fellows, 204 Dearborn Street, are taking bids for a manufacturing building to be built on the west side of Wabash Avenue, near Sixteenth Street, for the Republic Metalware Company, 23 Rand Street. It will be eight-story, 65x170 feet, of reinforced-concrete and steel construction, have pressed brick front, composition roof, steam heat, electric light, and cost $150,000.

It is reported that plans have been completed by Architects Holabird & Roche for the eighteen-story Sherman House to be erected at the northwest corner of Clark and Randolph Streets. Estimated cost, $3,000,000.

It is reported that the government intends doubling the size of Fort Sheridan and spending about $1,000,000.

CHILDS, MD.—Oblate Fathers of St. Francis de Sales, it is stated, have purchased 210 acres of land on which to erect college buildings; arrangements will be made for the erection of a three-story brick or concrete building. Rev. Peter P. Arnd, pastor, Church of Immaculate Conception, Elkton, Md., can be addressed.

CINCINNATI, O.—Philip Krug, of the Krug Realty Company, has secured a site at Reading Road and Hutchins Avenue and intends erecting a four-story flat, to cost $90,000.

CLEMSON COLLEGE, S. C.—Bids will be received by the Board of Trustees, Clemson College, for erecting a brick and concrete, 196x42 feet dormitory. For further particulars address W. M. Riggs, Clemson College.

CLEVELAND, O.—Reports state that a syndicate of Eastern capitalists will erect an eight-story building at Prospect Avenue and East Eighteenth Street. Plans are being prepared by Harry A. Cone, architect, 1229 Schofield Building. Estimated cost, $300,000.

Hubell & Benes, architects, Citizens Building, it is stated, will prepare plans for the new West Side Market House, to be erected on Lorain and West Twenty-fifth Street. Estimated cost, $350,000.

W. P. Ginter, architect, of Akron, O., has prepared plans for a church to be erected on Buckeye Road and East Nineteenth Street. It will be a sandstone structure, and cost $250,000.

It is reported that plans have been prepared by Architect Frederick W. Striebinger for the Cleveland General Hospital at Carnegie Avenue. Cost, $100,000.

Architects Searles, Misch & Gavin, 1430 Schofield Building, have prepared plans for the new Nottingham High School, to be erected at Dilly and Sachett Streets, and will let the contract at once. It will be three stories, 90x150, brick construction, have steam heat and slate roof. Cost, $50,000.

CLIFTON FORDS, VA.—Wilson, Harris & Richards, Philadelphia, Pa., are preparing plans for an addition to the Railroad Hotel at Clifton Fords, Va.

COLLINS, MISS.—Reports state that a company is being organized by Eugene E. Robertson and associates to erect a hotel, the building to be constructed of hollow concrete blocks.

COLORADO SPRINGS, COLO.—Dr. F. F. Caldwell, of Brooklyn, N. Y., is reported to be planning to erect a sanitarium in Colorado Springs, to cost $150,000.

COLUMBIA, MO.—The Trustees of the State University Y. M. C. A. have decided to let at once the contract for the erection of a $50,000 building.

J. A. McCarter has contract to erect proposed $100,000 stone courthouse. J. H. Felt & Co., Kansas City, Mo., prepared the plans.

COLUMBUS, O.—It is reported that a $100,000 hospital and three new pressed brick residences for officers are to be erected at the barracks. Maj. E. F. Glenn, Commandant.

CRANSTON, R. I.—The citizens are reported to be contemplating the erection of three schools, at a cost of $100,000.

DALLAS, TEX.—Plans have been prepared by Architects Hubbell & Greene, 517-518 Texas Building, Dallas, Tex., for a Scottish Rite temple for the Masons. The structure will be 160x150 feet. Cost, $100,000.

DAVENPORT, IA.—Clausen & Clausen, Central Office Building, it is reported, have been commissioned to prepare plans for a four-story building to be erected on West Third Street for Henry H. Petersen.

DAYTON, O.—John C. Good, Clerk of Courts, writes that the citizens have voted to issue $250,000 bonds for erecting a memorial building. Albert Kerns, Attorney, Chairman.

DENVER, COLO.—The Armstrong-Turner Millinery Company will erect a five-story fireproof building on Champs Street, between Fifteenth and Sixteenth Streets. Estimated cost, $100,000.

Sterner & Williamson, Jackson Building, it is stated, have prepared plans and are receiving bids for erecting an addition to the Denver Club house at Glenarm and Seventeenth Streets, to cost about $60,000.

Col. B. C. Dodge, it is stated, is preparing to erect an addition to the Shirley Hotel. Cost, $200,000.

DES MOINES, IA.—Fleming Bros. are planning to erect an eleven-story office building here at Sixth and Walnut Streets. Estimated cost, $200,000.

It is reported that the citizens have voted in favor of erecting a jail to cost $80,000, and a heating plant at a cost of $50,000.

Charles Hewitt & Sons Co. will erect a large wholesale warehouse in the spring on Fourth Street and the Des Moines Union tracks. It will be six and a half-story, 66x132. No plans have been prepared, but it will be of reinforced concrete, or brick and steel construction. Cost, about $75,000.

The plans for the Des Moines Postoffice Building are practically complete. It will be two-story, stone, 160x240, costing $500,000.

The Federal Land & Securities Company will erect a four-story stone and brick flat at Eighteenth and Pleasant Streets, to cost $60,000.

DETROIT, MICH.—J. I. Mills is reported to have prepared plans for a four-story flat to be erected at Adelaide and Woodward Streets, at a cost of $50,000.

The vestry of St. Paul's Protestant Episcopal Church has decided to build a large church in connection with the present chapel at the corner of Woodward and Hancock Avenues at an estimated cost of $200,000. Rev. S. S. Marquis, rector, 29 Lothrop Avenue. Theodore H. Eaton, chairman building committee, 28 Woodward Avenue.

It is reported that the trustees of the North Baptist Church have decided to build a new edifice to cost from $50,000 to $75,000. Rev. T. W. Young, D.D., pastor, was instructed to appoint a committee to arrange for plans and supervise building.

EAU CLAIRE, WIS.—Plans are being prepared by Thori, Alban & Fisher, 508 Chamber of Commerce Building, St. Paul, Minn., for the erection of the Lutheran Hospital.

FITZGERALD, GA.—It is reported that the Atlanta, Birmingham & Atlantic Railroad will erect a two-story depot and office building, to cost $50,000. George D. Wadley, Atlanta, Ga., is general manager.

FORDYCE, ARK.—Bids will be received until December 15 for the construction of school building in accordance with plans and specifications on file in the office of Dr. W. L. Worthington, chairman of building committee; usual rights reserved.

FOSTORIA, O.—Architect A. W. Johnson, Spitzer Building, Toledo, O., it is reported, has been engaged to prepare plans for a combination hotel and theatre building,

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which is to be built in Fostoria by C. C. Anderson and others of that place. The estimated cost is $75,000.

Frederick, Md.—Hamme & Leber, of York, Pa., it is stated, have prepared plans for the Y. M. C. A. building, which is to be erected at a cost of $50,000.

Great Falls, Mont.—Reports state that an addition will be erected to the Boston & Montana Company consisting of a set of blast furnaces, to cost $50,000, a 500-ton stack, to cost $200,000, and other improvements.

Green Bay, Wis.—Plans for the Ascot House, the new modern hotel which it is proposed to build on the site across from the St. Paul depot, have been completed. They have been prepared by Foeller, Benton & Schober, of 131 North Washington Street. These plans call for a modern hotel of 125 rooms, six stories high.

Gulfport, Miss.—Reports state that a ten-story steel and stone Masonic Temple will be erected here, at a cost of $150,000 to $200,000, by the Masonic Lodge.

Harrisburg, Pa.—Plans have been prepared by Architect C. Howard Lloyd, 216 Market Street, for the erection of an edifice for the Methodist Church. Cost, $60,000.

High Point, N. C.—Hook & Sawyer, Charlotte, N. C., it is stated, have completed plans for proposed edifice for the Methodist Church.

Homewood, Pa.—It is reported that Andrew Carnegie has given $150,000 to this city for the erection of a library. E. H. Garwood is chairman of library committee.

Huntington, W. Va.—Wilson, Harris & Richards, Philadelphia, Pa., are preparing plans for a station for the Chesapeake & Ohio Railroad Company, at Huntington, W. Va.

Indiana Harbor, Ind.—It is reported that the Inland Steel Company will expend $2,500,000 for the enlargement of its plant.

Indianapolis, Ind.—The Second Disciples Church has ordered plans for the erection of a new church, industrial school, and gymnasium building. Rev. H. L. Harrod, pastor.

The Board of Public Works having secured a favorable court decision will now ask for bids for the construction of the City Hall and Auditorium. Plans and specifications are now ready for bidders.

John B. Cockrum is chairman of the Building Committee to erect a fourteen-story office and grand lodge building in this city. The building will be of skeleton fireproof construction, with exterior walls of brick faced with white glazed terra-cotta richly embellished. The interior will be of mosaics and marble; the woodwork mahogany. The estimated cost is $400,000. Rubush & Hunter, American Life Building, architects.

Jackson, Miss.—Plans are being prepared for the erection of a church at Congress and Yazoo Streets for the First Methdist Church. Cost, $50,000.

Jacksonville, Fla.—W. B. Camp, 20 Main Street, will have plans ready for bids December 15 for high school building; press brick, Indiana limestone, concrete blocks, etc.; gas and electric fixtures; hot water or steam heat; cost, $50,000. Contract for construction will be let January 1, 1907.

Jersey City, N. J.—Plans have been completed by Architects Clinton & Russell, 32 Nassau Street, New York, for a power house, sterilizing plant, ambulance room, and dormitory for nurses to be built by the Jersey City Hospital, Jersey City. The buildings will be of reinforced-concrete and have thoroughly modern equipment. Cost will be about $70,000.

It is stated that a school to be known as No. 9 is to be erected at East Twenty-fifth Street and Avenue D, and is to cost $125,000.

Kalamazoo, Mich.—J. I. Mills is said to be preparing plans for additions and alterations to be made to the Michigan Asylum for the Insane at Kalamazoo, the cost to be about $60,000.

Kansas City, Mo.—George W. Hale, of Chicago, Ill., is preparing to erect a 150-room addition to the Midland Hotel, of which he is the owner. It is to be 80x120 feet, and cost about $400,000.

It is reported that the Board of Directors on November 6 approved the plans submitted by Charles A. Smith, Dwight Building, for the seven-story stone and brick Y. M. C. A. Building, to be erected at Tenth and Oak Streets.

It is reported that the Knights of Pythias are about to erect a building at Fifteenth Street and the Pasea, at a cost of $150,000.

Kenosha, Wis.—Reports state that the B. P. O. E. No. 750 will erect a clubhouse to cost $50,000. It will be three-story.

Kokomo, Ind.—Plans have been prepared for an edifice to St. Patrick Roman Catholic Church. Cost, $50,000. Rev. Father Lordeman, pastor.

Lafayette, Ind.—Plans are being made to secure an appropriation from the Legislature for the construction of a hospital, an old man's home, and an artificial ice plant at the State Soldiers' Home near this city. It will cost over $200,000.

Lansford, Pa.—Reports state that a $45,000 edifice will be erected to the Catholic Church.

Lawrenceville, Pa.—The Young Men's Christian Association will erect a new Y. M. C. A. building at Butler and Forty-fifth Streets. Estimated cost, $126,000.

Leavenworth, Kan.—Plans are being prepared for the erection of a hospital at Broadway and Michigan Avenues, by the Sisters of St. John's Hospital. Estimated cost, $100,000.

Leon, Ia.—The (Decatur) county has voted to issue $70,000 bonds for building a court house. Address H. G. Scott, County Auditor.

London, Ont., Can.—Bethune & Fuchs, architects, 215 Franklin Street, Buffalo, N. Y., are preparing plans for a seven-story hotel, to cost $130,000, which is to be erected here.

Long Beach, Cal.—Austin & Brown, 201 Douglas Building, are architects for the new Bixby Hotel to be erected here, at an estimated cost of $400,000; reinforced-concrete;

The American Architect and Building News.

Vol. XC. SATURDAY, DECEMBER 8, 1906. No. 1615.

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IN looking over the form of indenture which a father or guardian has to sign when a boy is placed as a "pupil" in an English architect's office, we were struck by the clause which covenants "that he [the pupil] shall and will, during the said term of years, loyally execute and perform the lawful instructions and directions of the Principal, and serve him as his Pupil and his secrets keep in all matters relating to the said Profession and other Business of the Principal." Rather a pregnant provision that "and his secrets keep," and it set us a-wondering whether in this country architects take proper care to assure that the draughtsmen they employ shall their "secrets keep." The old-time loyalty that used to subsist between architect and draughtsman, the time when a draughtsman felt sure that he would receive his pay throughout the year, even though slackening of work obliged his employer to go without profit, has very largely disappeared in these days, owing to the commercializing of the relations which exist between the architect and his helper. If the latter feels, as he does, that he is "likely to be fired" as soon as work slackens and it becomes good business to reduce expenses, why should he concern himself to be loyal to his employer and "his secrets keep"? At times we have been conscious that "things," of distinctly private import, got into the daily papers and professional journals which could only have got there because someone did not his employer's "secrets keep."

A CASE in point is—or at least it may be such—the attempt now making to provide a high-school building for Pittsburgh, Pa., an attempt which has been surrounded with a variety of complications having more than the common amount of unpleasantness intermingled. There have been quarrels about the selection of a site, there have been quarrels as to whether the design should be procured by competition, open or limited, or by direct selection, there have been injunctions and further quarrels in the Board of Education. Finally, matters were allowed to make progress, and, with Professor Laird as expert-adviser, a limited competition has been held with five Pittsburgh firms and five selected from elsewhere as the competitors. The result of further acrimonious discussion has been the selection of a design submitted by a Pittsburgh firm, Messrs. Rutan & Russell, and it will surprise no one to learn that as soon as the award was announced there was a further outbreak of unpleasantness, during which it was plainly charged that certain members of the Board of Education knew from the outset which design had been prepared by the men to whom the award finally went. Naturally, Professor Laird is indignant, and protests that the most scrupulous care was taken to preserve the anonymity of the competitors, and, as naturally, Messrs. Rutan & Russell, men whose reputation is excellent, protest with even more indignation that they, of course, had no hand in making known to any one the character of the design they were submitting. Nevertheless, the testimony tends to prove that it was known to some of the Board of Education that the Rutan & Russell design could be identified because its assembly-hall and gymnasium were disposed thus and so.

WE do not for a moment feel that either the expert-adviser or the competing architects was at fault. We believe that here, as in many similar cases, the mischief was done by some draughtsman who did not "his employer's secrets keep," but intentionally or unintentionally, maliciously or innocently, discussed somewhere, with somebody, the character and arrangement of the design his employers were to submit, and that by this channel the identifying facts were finally made known to members of the Board, accidentally or intentionally, as the case may be. Against intentional or malicious misfeasance an architect can have no protection, but against the mischief-making of an innocently loquacious helper many precautions can be taken, the best of them perhaps being the building up of a mutually loyal relationship between the architect and each one of the men he employs.

TO most of our readers, Samuel Cabot, who died last week at the age of fifty-six, and whose name has long been "familiar as a household word," was merely a man who manufactured a very excellent line of shingle-stains; but he was a great deal more than this, for, though nominally a manufacturing-chemist—a term which often applies to a man who pursues dollars rather than science—he unquestionably deserved to be considered a man of science, and a broad-minded one, actively interested in more fields than one. It is doubtful if his schoolmates ever have overcome their feeling of surprise that the rather sluggish, clumsy and unpromising boy they once knew was developing into a man whose scientific attainments were widely recognized, who was quietly securing a recognized position in the community, whose judgment was respected and whose opinion on matters of general civic interest was sought. A graduate of the Massachusetts Institute of Technology, he later became a member of its Corporation, and a year ago was one of the most confirmed advocates of the proposed merger of that institution with Harvard University. Although occupied in building up, from nothing, a large manufacturing plant

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that furnished a great variety of the useful products obtained from coal-tar, he found time to give serious attention to the study of aerostatics, and experimented with kites and aeroplanes. Becoming much interested in the Shakespearean controversy, he spent much time in counting the words and syllables in several of Bacon's essays and Shakespeare's plays in order that he might plot out parallel sets of curves which proved to his own satisfaction and that of other adherents of the Baconian theory that the plays and the essays had the same periodicity of accent and syllabication, and were, therefore, the work of the same hand, and that hand Bacon's.

AT length a finding has been filed in the matter of the building that collapsed during erection, at South Framingham, Mass., on July 23 last, causing the death of twelve persons and the injury of several others. It will be recalled that the building was of rather a complex structure, steel, concrete-blocks and reinforced-concrete seeming to have been used in some sort of combination; so it was not the easiest thing in the world to arrive at a plausible explanation of the accident. Mr. George A. Winsor, who was charged with the investigation, finds that those responsible for the building must have had notice that matters were going wrong, since he found clear evidence that attempts had been made to shore up a wall in which cracks had appeared. The probable cause of the collapse he finds in the concrete footings prepared for the basement piers. These footings were seventeen inches deep, and, owing to the nature of the site, they must have been cast in forms in which the water stood to a depth of fifteen inches. On examining these footings he finds that though the upper portion was sound, the bottom five or six inches was in poor condition—in some cases it could be crumbled with thumb and finger, and from this he infers that the concrete was dropped from a considerable height into the water-filled forms, thus allowing the cement to be pretty thoroughly washed from the aggregate. Possibly there may have been good reason for making the always doubtful attempt to lay concrete under water, but, so many other evidences of incompetence came to light after the collapse, we incline to feel that the leaving of water in such shallow forms was only one more item of inexcusable carelessness.

MORE promptly, a report is made upon the collapse, on November 21, of a reinforced-concrete building which was being erected for the Eastman Kodak Company, at Rochester, N. Y. The County Engineer, Mr. J. Y. McClintock, finds that a reinforced-concrete column which had to carry 596 pounds per square inch was so built that it could not possibly carry more than 500 pounds, and that the column was built as it was, was due to negligence in construction. This, we suppose, will somewhat lighten the load upon the conscience of the designer of the structure—four lives were lost—and perhaps tends to place the responsibility on "cheap labor," that overvalued factor in the merits of reinforced-concrete work. The column was twelve inches square and over seventeen feet high, reinforced by four rods extending through the full length, and by subsidiary rods through the lower ten feet of length. As we understand the testimony, these subsidiary reinforcements were lacking in the column that gave way, but the rods that should have been used there were found in the body of the next column, which seems to have received a double dose of the shorter rods. If this really states the situation, it would seem that these rods must have been dropped into the forms from above and left to discharge their expected function in a very hit-or-miss manner, which rather invited failure. Eternal vigilance must be the attribute of the clerk-of-works put in charge over reinforced-concrete work, if it is hoped to have it sound.

AT the dedication last week of a boys' high-school building at Reading, Pa., Mr. George F. Baer, President of the Reading Railroad, made an address which has attracted much attention, in part because Mr. Baer is widely known as the mouthpiece of the coal-carrying railroads at the time of the great anthracite strike two years ago, in part because he voiced a protest against the hysteria that just now possesses the public, and in part because what he did say, though somewhat trite, was very pithily said. Thus, amongst other things, he declared that "progress is safe only when it becomes a development of the accumulated wisdom and experiences of the past." He was speaking of political and social matters at the moment, but we can't help wishing he had been addressing a body of architects and builders who were about to embark on reinforced-concrete undertakings of one variety or another, since his admonition would precisely fit their needs. Substitute "reinforced-concrete" for the word "progress" in the quotation above and we have an apothegm that deserves a place on the office wall of every architect in the country. There is evidence on every side that experiences are accumulating only too fast; we can only hope that we are gathering a little wisdom at the same time.

IT is reported that the Kaiser Wilhelm II. has been discussing with Dr. Böde, curator of the Royal Prussian Museum, the advisability of legislation that shall prevent the sale to foreigners of pictures, sculpture and *objets d'art* now in Germany but not included in any national collection—in other words, the promulgation of a species of "Pacca edict." The suggestion seems rather illogical, for if there is a real purpose behind the many undertakings of the eccentric but hard-working Emperor, it surely is the securing to his people of material wealth computable in marks and pfennigs. If, for the sake of an increase of these, he is willing to allow the Krupp works at Eisen to sell to foreigners armor and arms that some day may be turned against his own subjects, it seems rather unreasonable that he should prevent others of his subjects from turning their canvases, marbles and bric-à-brac also into coin of the realm. With Italy the case is different, for a large part of the income of the Italian people is brought to it annually by the thousands of travelers drawn to the country by the knowledge of the glories of the arts that are to be found in private no less than in public collections, and it is obviously good business policy not to sell out all one's goods, if it is intended to keep on doing business at the old stand.

AVAILABLE STONE FOR THE WASHINGTON CATHEDRAL.

THE announcement made public that the Chapter of the Episcopal Cathedral of St. Peter and St. Paul, in Washington, has chosen Henry Vaughan, of Boston, and George F. Bodley, R.A., of England, to prepare plans for a great Gothic cathedral in the National capital naturally awakens interest in the selection of material for the structure. Little information has been given out as yet, beyond the facts that the cathedral will be one of the most imposing in America, that it will seat nine or ten thousand persons, will be five hundred feet long, will have three towers, will be in pure Gothic style, and will cost several million dollars. This is enough to show, however, that the edifice is likely to be one of the greatest pieces of stonework ever undertaken in this country. From the nature of the structure and the amount of ornamentation that will be called for, the choice of a material of construction assumes a far greater importance than in the case of a commercial building, or even a public edifice, of like size and equal cost. It may be assumed that the architects and the Cathedral Chapter will not finally settle upon any stone or stones without a careful study of every particular that enters into consideration. It is no impertinence and no attempt to forestall their action to discuss at this time the materials that are most available.

The various points that will lead to the selection of any particular stone may be enumerated in this order:

(1) Effect and durability. (2) Cost and economy of working. (3) Sufficiency and convenience of supply. These are all so inter-related, one to the other, that they cannot be considered apart. Such a building as contemplated will call for a great many hundreds of thousands of cubic feet of stone before the final pinnacle is set in place. To supply all of the material would be a severe draft upon any quarry in existence; indeed there are only a few that could venture to undertake it. The demand might even exhaust some entire deposits, where the merchantable stone is of limited amount. Architects have had so many bitter and costly lessons from inadequacy of supply and delay in delivery that it may be taken for granted that no final decision will be had until after the most thorough and careful examination of the stone *in situ*. In a matter of so great moment the examination should be made by a scientific geologist, to report as to geological formation, and by a practical quarryman, as well, the latter to determine as to the possibility of getting out the stone as needed.

It may be well at the outset to consider what is being done, and what has been done in the past, in a few similar instances. At the present moment three great cathedrals are in process of construction in this part of the country. The most notable, because the largest and most elaborate, is St. John the Divine, in New York. The exterior of this is of the light yellow Mohegan granite, quarried in Westchester County, a short distance back of Peekskill. The stone, previous to its selection for this cathedral, had comparatively limited use and had been but a short time on the market. The architects were led to the choice by the fact that this was the only available stone that gave the color-effect desired. The yellow granite is a unique occurrence, so far as known, and the deposit is not of great extent. Most of the available ledges are controlled by the Cathedral Chapter in order that they may be assured of their own supply. It is scarcely possible that a sufficient and rapid output of this stone for another great building could be secured, even if it were desired. For the interior of St. John's, in order to present a harmonious effect, choice was made of the yellow Frontenac limestone from Minnesota. The same conditions obtain here as with the Mohegan granite, complicated by the fact that it is difficult to obtain large blocks. With either of these stones the item of transportation to Washington would have an important bearing.

The new Catholic cathedral in Newark is nearing completion. The exterior of this is of Troy white granite, from New Hampshire. This is a fine-grained granite, of remarkably even texture, presenting what is known as a "pepper-and-salt" appearance, the "salt" being largely preponderant. The deposit is of considerable extent, and there are several quarry openings. Doubtless a sufficiency of this stone could be had, with further development, for another great cathedral, if the long freight haul to Washington did not stand in the way.

The Episcopal Cathedral of All Saints, in Albany, is at a standstill for the time, being far enough along toward completion to permit of full use for the purpose of worship. The walls are of a light red sandstone. Inasmuch as a similar material can be obtained in many parts of the country, there is no need to dwell upon this particular stone. The same is true of St. Patrick's Roman Catholic Cathedral in New York City, built of white marble from Westchester County, and the Roman Catholic Cathedral of the Immaculate Conception, in Albany, built of brownstone. There are many other handsome church edifices in various parts of the country built of the ordinary commercial stones that are in free use in their particular localities.

In olden times the cathedral builders were very much restricted in their choice of material. Unless there was direct water-carriage, stone had to be taken from deposits near at hand. This meant that many stones were used for great edifices that never would have been selected had it been possible to range farther afield; and yet the general result has been highly satisfactory in the main. There is always a particular harmony with its surroundings in a local stone. Besides, when chemical analysis and scientific testing were unknown, the use of any stone far from its natural location would have been purely in the nature of an experiment. In view of the rapid disintegration of much modern stonework, in spite of our advance in exact scientific knowledge, we are led to the conclusion that the ancient architects "builded better than they knew."

Modern systems of transportation will enable those in charge of the Washington cathedral to search for the best material over a large range of territory. Still, the nearness of a deposit to the National capital, other things being equal, will have immense weight in the final determination. The predilection of official Washington for a "white city" had led the Government to specify white marble and granite for public buildings, which are to be grouped, as far as possible. This will probably have no effect whatever upon the choice of stone for the Cathedral, inasmuch as the edifice is to be isolated in its own particular group of buildings. Beautiful as white marble is for structural purposes, it is not generally regarded as the most suitable material in which to interpret a Gothic design. Should the architects and the Cathedral Chapter wish to see their creation wrought in "frosted stonework," there is plenty of white marble available. The nearest supply is in Baltimore County, Maryland. This is a dolomite of medium texture, and is strong and durable. The deposit has been commercially worked nearly a hundred years. The stone was used in the National Capitol, and also in the Washington Monument. One objection that can be urged is that the stone is badly jointed as it lies in its natural bed and shows the effect of torsional movements. Dry seams sometimes reveal themselves in the quarried blocks,—although there is no difficulty in getting out stone suitable for all ordinary building purposes, and a few good-sized columns have been quarried. The Georgia marble fields are not so far away but that plenty of Georgia marble has been used in Washington. The same is true of the Vermont marble. Both of these stones are too well known to need any comment. They are among the few deposits where there would be no question about getting out the vast amount of material needed and making deliveries as rapidly as called for.

Some of the fine old buildings of England are erected of colored marble, like Purbeck. As yet we have nothing of the sort in America, with the exception of one or two buildings, like the Pierpont Morgan Library, where a tinted marble, a pinkish white, has been used. This gives an agreeable warmth of tone; but a material such as this pink Tennessee marble would be altogether too expensive for a mammoth cathedral; but there are deposits of colored marble that have not been used for decorative purposes because of difficulty in polishing or lack of liveliness in color. Many of these would make admirable structural stones. They are sound and durable, and easily quarried and worked. There has been no call for them for commercial buildings, because popular taste to-day generally demands a light and lively stone. But a touch of somberness is permissible in a cathedral and a stone of medium color and some "pattern" might make appeal to the architects. To mention a single deposit that would come within the above category, there is the broad marble belt that runs from the Island of Manhattan, through New York, Connecticut and Massachusetts into Vermont. This is mostly white marble, but at several places, notably in Putnam County, it develops into pronounced colors. These range from brown, through dove to pink. The colors are too closely in harmony to give any streaked effect. A building erected of such a stone would be absolutely unique, as well as undeniably beautiful.

If a light-colored granite should be desired, there is also

considerable latitude in choice. The whitest of the known granites is being used in the new Union Railway Station in Washington. This comes from the neighborhood of Bethel, Vt. The deposit is not very circumscribed, and there are several quarry openings. However, the output is pretty well taken up by existing contracts, and there might well be hesitation in giving out such a tremendous order as the Cathedral would entail. Among the Maine granites there are several fine-grained light stones, such as Hallowell, for instance. Half a dozen Maine quarries are capable of a practically unlimited output, and the stone could go by water transportation direct to Washington. Of the medium-colored and darker granites there are plenty closer at hand. In Howard County, Maryland, there is a dark gray porphyritic granite that has been used with good effect in the Catholic Cathedral at Baltimore. Other deposits of varying color are found in Cecil and Baltimore Counties. It must be said, however, that all of the Maryland granites are badly jointed, and consequently expensive to quarry. The entire belt of Archæan rock has at some time in its history undergone serious disturbance. Virginia also offers excellent gray granites, and the Richmond quarries can point to the State, War and Navy Building in Washington, one of the most elaborate granite structures in America.

Should the Cathedral builders desire to make use of granite, and at the same time seek a novel effect like that secured by the architects of St. John the Divine, they could scarcely do better than to go to North Carolina for their stone. There are unlimited deposits of granite in that State, although the quarrying industry there is only in its infancy. The stone lies in immense sheets, and by the use of water under hydraulic pressure tremendous blocks, sometimes containing more than a superficial acre, are broken out in one operation. Among the North Carolina granites is one of very fine grain and of a delicate pink tint, almost a flesh color. This is one of the strongest of known stones, a Government test showing a crushing strength of about fifty thousand pounds per square inch; and yet it splits with remarkable ease and is not difficult to work. This pink granite occurs at several places. It has not been long before the public and has not yet been used in any building of more than local importance.

It will not be surprising if choice is made of some other material than granite. In a building calling for elaborate ornamentation the cost of working will assume much importance. It is true that the use of pneumatic tools has greatly reduced the expense of cutting granite, but it is only natural in a job of such enormous magnitude that preference should be given to a stone that can be put under the gang-saw and the planing-machine. This does not mean that the choice will be likely to fall on the material that works most easily and cheaply of all, Indiana limestone. The Bedford oölite is one of the most beautiful, satisfactory and useful stones taken from the earth, but it is scarcely conceivable that it would be selected for a building intended to be one of the great monumental edifices of the country. Its widespread use for every variety of commercial structure, even warehouses and manufactories, would naturally preclude this. Even if an oölitic stone were desired, something different from the familiar buff and blue of Indiana is possible. The oölite belt covers a considerable territory, running from Indiana down to Alabama, and reappearing again in Cuba. The Kentucky oölite shows a wider range of color. As to its quality, one can speak in no uncertain tone. Professor George P. Merrill, Curator of the National Museum, perhaps the foremost authority on building-stone, says: "The oölitic limestones of this State are without superiors, if, indeed, they have equals." Some of the stone runs of a very light color, almost white. It has had little beyond a strictly local use, so its employment in the work under consideration would give the much-desired novelty.

If it were deemed desirable to go outside the country, a very beautiful oölite could be obtained from Cuba, in the outskirts of the City of Havana. The stone is found in both buff and blue. It has a finer and more even grain than the Indiana limestone, and the buff presents a very close similarity to the famous Caen stone. I have had samples of it carved, and it responds splendidly to the chisel. It can readily be cut with a penknife, and yet it is remarkably strong, standing repeated heavy blows with a hammer without fracture. Under the Spanish régime the stone was widely used for structural purposes, and an antiquated mill used for many years for sawing it into blocks was destroyed during the insurrection. The deposit is only a mile from the harbor, and with the water transportation it could be laid down in Washington as cheaply as any native stone. During the American occupation the stone was widely used for road-building and concrete construction, and there is a strong possibility that the ledges were shattered by dynamite blasting.

Should a limestone other than an oölite be desired, several admirable stones are available. In Schoharie County, New York, there is a compact crystalline limestone of gray color. This is indistinguishable, at a casual examination, from the celebrated Irish limestone. Like the latter stone, it has the peculiarity of tooling almost white and retaining this tint indefinitely. In Greene County, New York, there is a dense fossiliferous limestone, partly crystalline, of a medium brown color. It would prove rather expensive to work, however, on account of its hardness. Both of these stones are of great strength, of unquestioned soundness, and of excellent weathering qualities. They are also close to water transportation. I have singled these out of many more widely known limestones, not only because they seem specially fitted for work of this order, but also because they have not hitherto found use in important architectural construction.

Mr. Bodley, who is to be associated with Mr. Vaughan in the preparation of the plans for the Washington Cathedral, is also associated with Gilbert F. Scott in the erection of the new cathedral in Liverpool, to be the largest in England. This is to be built of red sandstone, a material found in great abundance in close proximity to Liverpool. Mr. Bodley may, therefore, have a natural predilection for sandstone. In this line we have a bewildering variety to offer, including every known color in which the stone occurs. What is more, despite our unfortunate early experiences with some of the New England brownstones, most of our sandstones weather far better than the English. There are many brownstone deposits not far from Washington, but if this material should be wanted it would well repay the extra cost of carriage to go to the quarries of Pennsylvania or New Jersey. Both of these States have the so-called gray as well as the dark browns, and they are the very best of their class. If the choice should be for a red stone, it should be taken from Massachusetts or Michigan, and, naturally, for a buff or a light gray the architects would go to Ohio. As far as the East is concerned, an absolutely new effect could be obtained by the use of the light pink sandstone found in Pine County, Minnesota, along the Kettle River. This has been used in a few public buildings in the West, but the natural beauty of the stone is soon obscured by the smoke stains of bituminous coal. In the clearer atmosphere of the East it might be expected to retain its freshness. It is extremely delicate in color, showing as nearly a true salmon-pink as one could expect in a stone. The richness of a vast Gothic cathedral, with its delicate tracery and towering pinnacles, wrought in such material can only be imagined.

If only for sentimental, patriotic and business reasons, it might be expected that the Cathedral builders would confine their choice to an American stone. But when it is taken into account that nowhere else in the world are better materials of construction to be found, there would be little to justify going outside of our borders. At one period in our history we drew freely from English and Scotch quarries for our structural stone. The experiment was not a happy one. Our streets are sprinkled with elaborately carved façades that have crumbled to unsightly wrecks under the severity of our climate. Scarcely a single foreign stone has weathered well in America. Candor compels the admission that there is one which has proved its equality with native material. This is the Nova Scotia sandstone. There would be no valid reason for the choice of any of the red Nova Scotia stones, for we can fully match them here. The color-effect given by the olive freestone might appeal to some tastes, but to many it would seem to lack the needed warmth. An argument could be advanced for the cheapness of all-water carriage. Against all claims on behalf of the stone, however, can be raised the argument that most of the quarries have already been worked below the sea level. The slightest touch of salt water, even the dashing of spray over a vessel's deckload of stone, causes an efflorescence that is most objectionable.

Architects have a decided fondness for yellow, and, unfortunately, Nature, so prodigal with her gifts, offers little of this tint. For some reason, too, the yellows that are found are seldom permanent in color on exposure. The limestones and marbles, in particular, are apt to weather to a gray or to a muddy brown. In sandstone the color is generally more inclined toward buff when it is first taken from its bed, but it proves more durable. There are large tracts of undeveloped sandstone all through

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"NORWOOD HALL," CHESTNUT HILL, PHILADELPHIA, PA.

George T. Pearson, Architect.

The American Architect and Building News.
Regular Edition.

Volume XC., Number 1615.
December 8, 1906.

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the South. I have been shown a sandstone from Richmond County, North Carolina, that could be called without too great a stretch of the imagination a canary yellow. It certainly more nearly approaches that tint than it does a buff. To use a standard comparison, it is as even and uniform in grain and works almost as readily as Caen stone. Similar deposits are reported elsewhere. This is another material that would yield a marvelous effect if it could be employed in a great building of rich ornamentation.

Architects and building-committees have a natural hesitation in selecting a material where no development work has been done. This is generally because the stone is wanted for a commercial or public building where the element of time is a leading consideration. The Washington Cathedral, however, is to be in construction during a long course of years, and more deliberate methods are possible. With an assured market of a million or more cubic feet of stone, whenever a choice is made, railroad and transportation companies would lend all the aid in their power to the work of development.

Few such grand architectural opportunities as this cathedral affords are offered in a century. If those in charge of the work rise to the full level of their duty they will not content themselves with sitting in their offices and calling for samples. They will range far afield in search of the very best material the country affords, whether it be found in quarry banks or deep in the earth. Once it is found, needed enterprise and capital will not be lacking to bring the stone in constant supply to the builders.

FRANCIS W. HOYT.

"ARCHITECTURE AS A BRANCH OF CIVIL ENGINEERING."

THERE is just now so much of a certain veiled hostility between the architect and the engineer, owing to the fact that modern building methods have forced them into a coöperation where the function of each is of such real and indispensable importance that each is inclined to feel and assert that his claim to authorship in the mutual accomplishment is preponderant over the other's, that our readers will find an interest in the enclosed fragment of a discussion that took place at the late annual meeting of the American Society of Civil Engineers, the topic being that perennial one, an amendment to the constitution, worded as follows:

"Strike out Sections 1, 2, and 3 of Article II., present Constitution, and substitute three sections, as follows:

"1. The Corporate Members of this Society shall be designated as Members and Associate Members. Corporate Members shall be Civil Engineers; the profession of Civil Engineering being here defined as including the branches commonly called Civil, Mechanical, Mining, Electrical, Military and Naval Engineering, and embracing Architecture and Naval Architecture. There may also be connected with the Society, Honorary Members, Associates, Juniors, and Fellows, who shall be entitled to all the privileges of the Society except the right to vote and to hold office therein; provided that Honorary Members elected from the Corporate Members of the Society shall retain their right to vote and to hold office."

THE PRESIDENT.—The Section is now open for consideration.

C. C. SCHNEIDER, PAST-PRESIDENT, AM. SOC. C. E.—I would suggest changes in the second sentence, to read as folows: Corporate Members shall be Civil Engineers of all branches of the profession, and embracing Naval and Military Engineering and Naval Architecture.

(Motion duly seconded.)

MR. MARBURG.—Do I understand Mr. Schneider to exclude Architect?

MR. SCHNEIDER.—It was my intention to omit Architects, because, if we left the word "Architect," we would be compelled to admit, as a full Member, any one who calls himself Architect, and who has been in business for five years. Many of those who call themselves Architects, nowadays, are neither architects nor artists, but decorators.

MR. MILLER.—I believe I made that suggestion in the previous Business Meeting; for this reason, that Architecture is one of the fine arts, and Engineering is, as has been suggested, a science, and there are many architects who have reached eminence in their particular line, but who are not qualified as Engineers, and I think ought not to be admitted to any of the grades of membership. They should properly be placed in our grade of Associate.

S. BENT RUSSELL, M. AM. SOC. C. E.—If the motion is in order, I would like to move that it is the sense of the meeting that architects should be placed among the Associates and not among the Corporate Members.

MR. WILLIAMS.—I will support that motion.

WILLIAM C. FURBER, M. AM. SOC. C. E.—I think the Civil Engineers' Society, the American Society of Civil Engineers, are constantly narrowing themselves, so that instead of embracing the whole circle of engineering, they are liable to be railroad engineers and bridge engineers and surveyors. If you look over the field of electrical engineering, you will find that the electrical roads are not being built by the Members of the Society; if you look over the mechanical structures being erected over the country I think you will find that there are many not being erected by members of the American Society of Civil Engineers. I do not think that any of the members who have spoken against including architects would do so if the members realized the extent and the value of the services that the architects perform.

The statement that they are decorators is not true of the great men of that profession. It is not true of the men who designed the monuments of antiquity, the magnets that draw travelers across the ocean. I think it would be a great mistake to exclude the architects from the professional members of the Society.

MR. TRAUTWINE.—It occurs to me that it would be unwise and improper to strike out Architecture as a branch of Civil Engineering, under the definition quoted here this evening. Engineering being the science and art of directing the great sources of power in nature to the use and convenience of man, Architecture is a branch of Civil Engineering. It is the art of decoration in Civil Engineering applied to the construction of buildings. It may very well happen that men who call themselves architects are only decorators of buildings or furnishers of designs for buildings, but it seems to me that that is not a proper excuse for leaving them out as a branch of Civil Engineering, and that it should be the province of the Membership Committee to say whether an architect has been engaged in responsible work or whether he is a mere decorator.

MR. SEAMAN.—I think that if an architect practices in connection with his profession Engineering, he is an Engineer, and as such should be admitted, but merely that he is an architect does not make him an Engineer; and I think that the architect should be excluded from the list of engineers unless he is an engineer himself. It has been said before our Society that the Architect is the Engineer of the world. I think it may be more rightly said to-day that the Engineer is the Architect of the world.

J. WALDO SMITH, M. AM. SOC. C. E.—It seems to me that this matter of architects and naval engineers is taken care of by the present Constitution. An architect applies for membership, and if he has all the qualifications of a Member he is placed in the grade of Member. If he has the qualifications of the Associate he is placed in that grade, and I do not see why the matter is not all right just as it stands.

MR. SWENSSON.—I most heartily agree with Mr. Smith. I think the name "architect" should not be stricken from the classified membership, but that the Board of Direction through its Membership Committee will take care of the matter of classification and put the man where he belongs.

THE PRESIDENT.—Any further discussion of Mr. Russell's motion?

MR. WILLIAMS.—I move to lay this motion on the table.

(Motion seconded.)

THE PRESIDENT.—It is moved that the motion of Mr. Russell be laid upon the table. Those who are in favor of the motion will say "aye;" those opposed, "no."

The motion is carried.

THE ORIGIN OF LANDSCAPE.[1]

NO matter in what direction we turn, under what form of climate, or with what type of geological structure we may choose to begin, the cardinal fact which meets us at the outset, and at every subsequent step of our progress, is the universal decay of the surface of the land. Even where no pains are taken to inquire how this waste is brought about, or what relative share each agent of destruction can claim in the final result, it can readily be perceived that no matter what may be the conditions of climate or exposure, the rocks that come to the light of day are suffering a constant superficial decomposition. The thin crust of disintegrated material formed upon their surface is gradually broken up and washed off by rain or blown away by wind, so as to expose a fresh surface underneath to a repetition of the same process. Every shower that descends upon the land contributes towards the removal of the loosened particles, and the reality and efficacy of this contribution may be seen in the mud which darkens the rivulets and rivers. Though the measurable extent of the denudation displayed by a landscape may be enormous, obviously no extraordinary agent or process need have been con-

[1] Extracts from a paper in the *Edinb Revgh riuewfor* October 1906.

cerned in its production. It may well have been effected by the same seemingly feeble powers whereby it is still continued, if only sufficient time be granted for their task. Nor do we need to assume that they must formerly have worked faster than they do now, for it has been shown that even at their present rate of activity a comparatively short geological period would suffice to reduce most of the dry land to the level of the sea. . . .

Apart, however, from the varying rate of denudation, according to the angle of declivity of the ground, and the energy of the agents by which the work of destruction has been carried on, a fundamental source of variety in the topographical results achieved is to be recognized in the diverse characters and powers of resistance of the rocks which come to the surface. It is to this cause that the local distinctions of landscape must be mainly assigned. As the harder materials withstand subaerial decay better than those of softer nature, in the general progress of the lowering of the land-surface they will tend to be left projecting as ridges and hills, while the less durable varieties will be worn down into hollows and plains. Again, among the harder kinds of stone, great differences exist in internal structure, and in the way in which such rocks yield to the attacks of time. Each of them succumbs after its own fashion, and thus contributes its own individual features to the general scenery. In the south of England, for example, "the long backs" of the "blushless downs" mark the successive outcrops of the Chalk. Farther north, through the midland counties, the winding ridges of escarpment, with the level plains between them, show where the hard limestones and the softer clays and shales of the Jurassic series come in alternate bands to the surface. Far to the west, the rugged tors of Devon and Cornwall owe their distinctive forms to the weathering of the granite hills. The high grounds of Wales and the Lake District are built up of ancient massive marine sediments and enduring volcanic rocks, which, with their endless varieties of composition and structure, have been sculptured into the array of picturesque shapes so characteristic of these regions. In the Lowlands of Scotland, the isolated crags, crowned in so many cases with mediæval castles, consist of obdurate eruptive rocks which have outlasted the destruction of the sedimentary strata that once lay piled in thousands of feet above them. In Antrim and among the Western Isles, the terraced hills, with their successive platforms of dark stone and green slopes between, mark the outpourings of the youngest volcanoes of Britain, which, comparatively recent though they be, have been trenched by endless deep and wide glens and long arms of the sea until they have been reduced to a series of scattered outliers on the mainland and detached islands fronting the western coast.

The slow and prolonged process of scultpure, to which the gradual evolution of landscape has been mainly due, was obviously liable from time to time to be variously modified by movements of the earth's crust. These changes were sometimes tranquil, a terrestrial region being gradually pushed above, or let down below, the level of the sea. At other times the movements have been more energetic, and have culminated in the upheaval of long and lofty mountain-chains. Some of the consequences of such disturbances of the crust, whether in the way of elevation or depression, deserve attention from the influence which any change of level would necessarily exert in modifying the progress of denudation. An uplift of the ground tends to heighten the rainfall, to augment the volume and declivity of the rivers, and thus to accelerate the general erosion. If this uprise is long-continued, but interrupted by pauses of some duration, during which the level of the land remains unaltered, the progress of decay will be marked by alternations of periods of more vigorous and more feeble activity. The old river-terraces which form so conspicuous a feature of temperate latitudes both in the Old World and in the New, and which in Western Europe have yielded so many remains of extinct animals and flint-instruments of human workmanship, have been plausibly regarded as memorials of such a series of uplifts, separated by long intervals of rest. In Britain the larger streams commonly display two, not infrequently three or more, well-defined platforms of alluvium above their present channels. There can be no doubt that each of these terraces marks a former level at which the neighboring stream flowed, and that since the highest of them was accumulated, the water has gradually cut its way downward in the bottom of its valley to the level at which it now runs. These river-terraces have never yet been made the subject of a general detailed study, which they well deserve to receive, not for a limited district merely, but for a wide region or a whole country. Whether, or how far, they can be shown to indicate an intermittent uprise of the land, remains for future discovery. It is at least certain that at a comparatively late period some portions of the British Isles underwent an emergence from the sea interrupted by long pauses, each of which is marked along the coast-lines by a platform of marine alluvium or old sea-beach, and some of these beaches undoubtedly merge inland, into true river-terraces. . . .

There can be no doubt that at a comparatively recent geological date Britain stood a good deal higher than it now does, and was united to the Continent by a wide wooded plain, across which the Thames and our other eastern rivers, together with the Rhine, the Elbe, and other Continental streams, flowed towards an Atlantic inlet between Shetland and Scandinavia. On our western coasts the present groups and chains of islands were in great part joined to the mainland, which, with its hills, glens, and lakes, stretched some way westwards, beyond the present limits of the land. Since that time the whole region has subsided. The eastern plain now lies below the shallow North Sea, while on the western coast the tides of the Atlantic flow far up what were formerly glens and straths. So comparatively rapid and so recent has been the subsidence, or so slow the deposit of sediment on the sea-floor, that with the help of the sounding-line it is even yet possible to map out the course of the submerged valleys and lakes, together with the position of the ridges that rise between them. . . .

If we suppose the case of a region in which no movements of the terrestrial crust take place for an indefinite period, but where the progress of denudation is allowed to continue without interruption or modification, we can conceive that the land will gradually be reduced in level and in area until finally it will disappear under the sea. At present, in such a tract of the earth's surface as Western Europe, with much high ground and a copious rainfall, it can easily be shown that the amount of material eaten away from the coasts by the waves and tidal currents of the Atlantic and North Sea is exceedingly small when compared with that which is removed in the same space of time by brooks and rivers from the general surface of the Continent. But in the case supposed, where denudation is allowed to go unchecked by any underground disturbance, the character and rate of the denudation will gradually change in proportion as the land is reduced in level and approaches more and more to the form of a plain. As the rainfall, and with it the volume and erosive power of the streams, will consequently diminish, subaerial erosion will become continually feebler. But no corresponding cause will affect the abrading power of the sea. So that, in the last stages of the disappearance of a land-surface, marine action may equal or surpass in efficacy that of the subaerial agents. The final result of such an undisturbed continuance of denudation will be the production of a plain (the "plain of marine denudation" of A. C. Ramsay), the surface of which may ultimately lie below the downward limit of marine erosion. Reduced to that level, the plain thus formed will be protected from further abrasion by the overlying water, and may remain in this condition for an indefinite time, until some renewed disturbance of the crust shall either depress it, so as to allow it to be buried and preserved under accumulations of marine sediment, or upraise it into land to undergo once more a cycle of denudation.

Whether or not, in the past history of the globe, the crust of the earth from time to time remained long enough undisturbed to allow the process of denudation to reach in this way its ultimate limit over a wide region cannot be positively affirmed, though various districts may be cited as affording a strong presumption that such has been the case. The Scandinavian fjelds for example, consist of a complex series of ancient rocks which have been worn down into the broad table-land already alluded to, on the wider parts of which lie the chief snow-fields. A similar structure may be observed in the Grampian Hills of Scotland, where, at heights of 3,000 feet above the sea, there are spaces large and level enough to be turned into race-courses. But even where the extreme result of denudation has not been reached, there can be little doubt that again and again in the geological past the intervals between great uplifts of the terrestrial crust have been long enough to permit tracts of high ground, sometimes even mountain-chains, to be worn down into undulating lowlands. Traces of such erosion are still to be seen beneath the piles of sedimentary material of which so much of the crust of the earth consists. But had all relics of such ancient land-surfaces been wholly buried under these accumulations, we should only have to contemplate the vast thickness and wide extent of the stratified for-

mations, to be assured of the potent influence which denudation has played throughout the past in the demolition of land and consequently in the evolution of scenery. . . .

In pursuing the details of this history we do not need to conjure up visions of unknown forces of nature, or to indulge in speculations as to ancient convulsions that broke up the surface of the land. The processes concerned in the evolution of our landscapes are familiar operations of nature, and the results which they achieve can be illustrated in examples culled from every quarter of the globe. The truth is thus impressed upon the mind that the detailed features of the land, instead of having been brought about by paroxysms of commotion in the crust of the earth, have been carved in the course of ages by the same everyday agents that are still busy at their task before our eyes.

CURRENT REPARATIONS AT ST. MARK'S.

A WRITER in the *Morning Post* gives some interesting details of the work of preservation now in progress at the basilica of St. Mark.

"At the present moment work is being actively prosecuted in no less than four separate points of the building, while at two others the preparations for repairs are now made. First and most noticeable is the task of making good the fissures that have appeared in the atrio, or vestibule. The part to the right of the main entrance is now entirely closed to the public, and there the engineers have had a difficult problem to solve. The great columns which stand there have been split by the oxidization of the iron clamps inside the base and at the top of each, and it has been necessary to raise the capitals, which fortunately have nothing resting on them, by means of a crane, extract the oxidized iron, replace it with bronze, lift up the whole column for the same operation at its base, and then replace each column and capital in its former place and at its former angle, slightly out of the perpendicular. Two columns have already been treated successfully in this way. In a fortnight's time another pair will be taken in hand. Inside, right up to the roof, there now stands a vast and massive scaffolding, four stories in all, made of American pitch pine, which looks as if it were meant to last forever. The roof was cracked in this part, and the mosaic has consequently been partially removed. Complaints are made in Venice that this operation is frequently misunderstood abroad, and it may therefore be well to describe how it was accomplished. An impression of the mosaic is first made on specially prepared paper—*carta da filtre* as it is technically called—which, being porous, receives an exact impression of each separate piece of mosaic. This paper is then colored with the precise colors of the original, and serves as a pattern. The mosaic is then taken off in strips of about 2 or 3 feet in length and is laid on the wooden floor of the scaffolding in exact order, just as it was on the wall of the basilica. All the mosaics of the Tribune of the Patriarch, for example, which had begun to fall, are now lying in this position. The architects claim that when a wall has been repaired and the mosaic replaced it is impossible to distinguish any difference between that which has never been moved and that which has been temporarily taken off. Certainly an untrained eye finds it impossible to say where the division between the two begins.

"From the vestibule we pass to the above-mentioned Tribune of the Patriarch, now stripped of its splendid dress. Here one of the arches has given way, part of the Byzantine cornice has slipped about an inch, and the circle of the cupola has been so displaced as to be now an ellipse. Emerging through a dark and narrow passage onto the roof, and scrambling over the leads, we find that the men are at work on the central cupola, where more than half of the woodwork and the lead which covered it have to be renewed. At the cupola of the Madonna the mosaics have been already replaced, but the work of strengthening the supports of the cupola is not yet finished. More serious will be the repairs at the corner of Sant' Alipio, which faces the Piazzetta dei Leoni, and which needs drastic overhauling, as its walls are in a bad state. The last item in the present programme is the repair of the dome of the Apocalypse, the plans for which are complete. There is no lack of funds for St. Mark's. The Austrians endowed it with £2,040 a year, and for many years there were large savings out of this income which are now available."

ZODIACAL MOSAICS.

IT happens that at the time Signor Melani's papers on "Artistic Italian Pavements" were appearing in this journal there was being published in the London *Builder* a more extended series of articles on "Mosaic and Marble Inlays" which covered, with greater detail, essentially the same field. One of the *Builder's* readers noting the mention there of the zodiacal mosaics, to which Signor Melani also refers, has been prompted to contribute the following communication on the subject which our own readers may find of value:

SIR—In connection with the valuable articles on "Mosaic, and Marble Inlay" in the last few numbers of your journal, I don't know whether you may consider the subject of the Zodiac in mosaics as worth noticing, but I have not observed all the following examples among those mentioned. The twelve signs make a remarkably handsome pavement pattern either in tesseræ or in marble inlay, though, of course, the reasons for using the Zodiac thus, were not artistic, but rather mystical or astrological. I don't remember coming across any example of a Zodiac in Roman mosiac.

1. In an old mosaic pavement of small white and black stones representing the seven planets, signs of the zodiac, etc., in the Isle of San Giulio, Lake Orta, North Lombardy. IVth or Vth century. Now destroyed. Stuart: *"Sketches of the Riviera and Lake of Orta."* Milan. 1867.

2. In a tessellated pavement in the crypt of San Savino, Piacenza. Xth century. Murray: *"North Italy."*. 1843; p. 379. *"Discrizioni di Monumenti Piacenza"*; and *"Archæologia,"* xliv.

3. Black and white circular zodiac in the pavement of the Baptistery, Florence, by Strozzi, the astrologer, with a motto which can be read either way. XIth century. *"Annales Archéologiques,* xv., 231; *"Archæologia,"* xliv. Murray, 1048; Baedeker, 1200; Cook, 1293, are the dates given.

4. In mosaic on the west doorway of Notre Dame Cathedral, Rheims. XIth century. *"Archæologia,"* xliv., *"Dictionary of Architecture."*

5. In mosaic at Tournus. XIth century. *"Archæologia,"* xliv.

6. In mosaic tablets on the pavement, 12 inches square, Notre Dame, S. Bertin, S. Omer. Almost unique. Greek or early Italian. Perhaps from the East. Shaw: *"Specimens of Tile Pavements."*. Weale: *"Belgium."* *"Archæologia,"* xxx.; Wallet: *"Description du pavé de S. Omer,"* i., 847; *Builder,* xlii., 787; Rolleston: *"Mazzaroth."*

7. In the pavement of the crypt of S. Gereon, Cologne. Three signs on each side of the altar and six in front. *"Archæologia,"* xliv.; *"Ann. Arch.,"* xvii. XIth century. By Avenarius.

8. In mosaics designed by Raphael, each with one sign. Libra is Venus. 1516. Paper casts are in the V. and A. Museum.

9. In the mosaic pavement before the high altar in Lyons Cathedral. XIVth century. *"Archæologia,"* xlix.; Higgins: *"Anacalypsis,"* i., 69, ii., 57; *"Dict. Arch."*

10. In white marble inlay, along a meridian line, in a chamber beyond the choir in the Capuchin Church, Piazza Barberini, Rome. By Casoni, fl. 1622.

11. Planisphere in a mosaic pavement, with meridian line and signs; in S. Petronius, Bologna. By Cassini, 1655. Morgan: *"Italy,"* ii., 8.

12. Black and white zodiac in a mosaic pavement in San Miniato, near Florence. 1207. *"Ann. Arch.,"* xv., 231; Waring: *"Arts,"* plate xxiv., *"Archæologia,"* xliv.

13. In a circle of very fine Roman mosaic work in the Grand Trianon, Versailles. *Circa* 1810.

14. Very large signs in circles, in the mosaic pavement of the Galliera Umberto, Naples. *Circa* 1890.

15. In the black on white inlay, on the pavement of the Duomo, Milan, along a meridian line.

16. On a table of most delicate mosaic, in the Gallery of the Pitti Palace, Florence.

17. In rosso and giallo inlay, along a meridian, in the pavement of Messina Cathedral. Old and worn.

18. In red Spanish marble inlay on white, along a meridian, in San Nicola, Catania. By Sartorius, 1841.

19. In black, white, and brown, in a mosaic pavement, with the four rivers, hall of the Rigks Museum, The Hague. XIXth century.

20. In the pavement, in black and white inlay, with the months, of the chapel of S. Firmin, in S. Denis. *"Dict. Arch."* Engraved in Lenoir: *"Atlas,"* plate xi.

21. In chocolate and white, in a fine mosaic pavement, with sun and moon, and two Latin versicles from the "Children's Song," in the vestibule of an old Gothic church in Severinskloster, Cologne.

D. J.

BRUNSWICK TO-DAY.

THE stranger is not interested in these shadows of the old Guelph order—these dynastic intrigues in foreign courts. His eyes are caught and fascinated by the antique architecture. Brunswick is the Nuremberg of North Germany. In the old town, encircled with gardens and promenades where once were the defences and moats, there are scores of mediæval houses in brick or timber, with narrow gables, high-peaked tiled roofs and Renaissance façades with Italian motives of ornamentation. These impart a more distinctive character to it than either the high-towered Romanseque churches, half transformed into Gothic, or the modern architecture, exceptionally good as it is. These picturesque guild-halls and merchants' houses did not lose their essential German qualities even when tricked out with Italian richness of style. The paneling may have found its way into museums as examples of old-time craftsmanship and the antique furniture may have been emptied out of the halls and drawing-rooms into curiosity-shops, but the gables and roof lines are as uncompromisingly native as the language of Luther's Bible. There is the same jumble of styles that makes Nuremberg picturesque and delightful. In the market-place are the wings of the Gothic Rathhaus, with open arcades, delicate stone tracery and richly carved beams; the Renaissance Gewandhaus, with its nine tiers of sculpture and ornament, and the Romanesque basilica of St. Martin's, in various stages of transition. In the rambling streets running out of the Südklint, the Kohlmarkt and the Burg Platz there are pure Gothic structures like the Alte Waage and timber Renaissance mansions, with the gables tilted at the ends so as to leave the long side free for artistic embellishment with raised balconies, overlapping stories, carved balustrades and cornices, projecting windows and ornamental shells, fans, schemes of foliage and burlesque relief. Happy is the traveler with an eye for variety of form and fantastic ornament who is free to stroll among these brick guild-halls and timber houses, and to mark the contrasting effects of the mediæval churches! It is a masquerade of many styles without regularity of design or symmetry of treatment, and with all the ornamental motives borrowed from Italy there is always the characteristic German structure.

The new architecture blends so happily with the old brick-and-timber houses that one is reminded of Munich as well as of Nuremberg. There are the Romanesque theatre, the early Gothic town-house, the Renaissance palace with a quadriga above the portal and with the Ducal Museum, the Technical High School and many other modern Italian structures to match it. The old motives are repeated in the new architecture with fine variety, and one does not seem to pass from one age to another in going from one quarter of the town to another. Brunswick, with all its modern additions and outlying suburbs, is a homogeneous city with a unity and dignity of its own, like Munich. Its architects under the Regency, instead of laboring with heavy hands, like those of Berlin and Hanover, have been inspired by reminiscences of German, Gothic and Italian Renaissance in the old quarter and have displayed lightness of touch in ornamenting the new structures designed by them. If there are fewer fountains than in Nuremberg, and not so many museums and Renaissance façades as in Munich, there are spacious promenades and parks ornamented with good statuary, and there is an air of stately elegance and artistic refinement which justifies the conclusion that Germany with its highly organized system of education has become a more cultured as well as a richer nation. One does not have the same impression in other towns, where a mob of mediocrities has apparently taken possession of the art and architecture and driven out the Genius of Decoration. In Brunswick the new artists, like the old craftsmen who worked on the vaulting of the Romanesque churches or among the gables of the timber houses, have understood something of the poetry of their trade.—*"I. N. F." in New York Tribune.*

ILLUSTRATIONS

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Other views of this house may be found in our issue for May 28, 1898.

NOTES AND CLIPPINGS

ELECTRIC FOUNTAINS.—Really the term electrical fountain is a misnomer, for the current is usually employed merely for illumination, and not in forcing up the water from the basin or other form in which the fountain has been designed. This work is generally performed by the ordinary steam or hydraulic pump, where the location of the source of supply is not sufficiently elevated to furnish the requisite pressure. Several American fountains have been constructed, however, where the electric current is utilized for power as well as for producing the light effects. One of the largest and most notable fountains of this class in the United States is located in Willow Grove Park, in the suburbs of Philadelphia. It is designed entirely for amusement purposes, and the various shapes assumed by the water columns at nightfall, reflected as they are in the rays of the varied lights, form a spectacle which attracts thousands. The water required for this fountain aggregates 50,000 gallons every twenty-four hours, and is supplied by one large and one small pump, the larger being actuated by two 50-horsepower motors working on a 500-volt current.—*D. A. Willey, in The Electrical Age.*

CARBONIC ACID AS A CAUSE OF RUST.—In view of the important place given to preservative coatings in the programmes of engineering associations and the divergent views on the cause and prevention of rust, interest attaches to the data presented by Gerald Moody, of the Central Technical College, at a recent meeting of the Chemical Society in London. The accepted theory has been that the presence of oxygen and moisture would always cause rust, and the view of some chemists that carbonic acid played an important part in the reaction has been considered disproved by experiments carried on by Dunstan, Jowett and Goulding. Mr. Moody, as reported by the London *Engineer*, held that minute traces of carbonic acid are sufficient to set up atmospheric corrosion, and he entered upon a series of experiments to justify his opinion. In these experiments extraordinary precautions were taken to exclude the minutest traces of carbonic acid. His plan was to keep a sample of highly polished iron in a few drops of distilled water for prolonged periods and to draw over it a continuous stream of air freed from carbonic acid by passage over caustic potash and soda lime. In some instances three weeks were expended in purging the apparatus of carbonic acid alone before the water was allowed to reach the iron, and for six weeks the pure air passed over the sample. At the end of this time the iron was as bright as when the experiment began. But, on the other hand, when air containing the normal quantity of carbonic acid was drawn over the sample, in six hours the bright surface was tarnished, and in seventy-two hours, during which time about sixteen litres of air passed over it, "the whole surface of the metal was corroded and a considerable quantity of red rust collected." The question presented by these experiments to the manufacturer of preservative coatings is how to exclude or neutralize the action of the carbonic acid carried by the atmosphere or by moisture. Two correspondents of the *Engineer* comment on the above to the effect that there must be moisture to cause rust. One says that the experiment of the late Prof. Grace Calvert, in 1869 to 1871, showed that with dry carbonic acid there was no oxidation, and that the most rapid corrosion took place when the iron was exposed to damp "oxygen and carbonic acid." The other correspondent says that in all cases of rust, water, as well as carbonic acid and oxygen, must be present; that no oxidation can take place without water, though it has not been ascertained how much moisture must be present or the precise part it plays.—*Journal of the Franklin Institute.*

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WANTED—A first-class architectural designer and draughtsman, to fill a permanent position. Address 22-A, American Architect.

WANTED SOLICITOR—A well established firm of architects in one of the best cities of the country want a man familiar with building to solicit new work; need not be much of a draftsman but must be energetic and a good talker and capable of winning the confidence of people; a good chance and would form partnership with right party; an experienced architect who is a strong solicitor preferred. Address 23-A, American Architect. (1615, 1616)

PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., December 3, 1906.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 7th day of January, 1907, and then opened, for the construction (complete) of the extension to the U. S. Post Office and Custom House at Newport, Rhode Island, in accordance with the drawings and specifications, copies of which may be had at this office or at the office of the Custodian of the Building at Newport, Rhode Island, at the discretion of the Supervising Architect.—James Knox Taylor, Supervising Architect. (1615, 1616)

ADDRESS WANTED.

ADDRESS WANTED—Will R. W. G. Bonsfield (about 1902, draughtsman in office of Mr. Henry F. Kilburn, New York) send his address to Mrs. Kilburn, 271 West 71st Street, New York? (1615)

Wm. L. Woollett and J. W. Woollett, Architects and Engineers, having an office also in Albany, N. Y., have recently opened an office in San Francisco, and will be pleased to receive catalogues and similar trade literature at 333 Monadnock Building, San Francisco. (1615, 1616)

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fireproof. It is to be of Spanish and Moorish architecture.

LOS ANGELES, CAL.—F. H. Holmes, it is reported, will erect a six-story hotel at Westlake Avenue and Sixth Street at a cost of $300,000. It is to be of fireproof construction.

According to reports, the members of the Los Angeles Athletic Club are contemplating the erection of a new building, at a cost of about $400,000.

Plans are being prepared by Architect S. T. Norton for the erection of a six-story building, to cost $200,000.

LYNCHBURG, VA.—Plans have been prepared by Lewis & Burnham, National Bank Building, for the erection of a business building. Cost, $80,000.

MCKEESPORT, PA.—Architect H. J. Lohman, of McKeesport, has plans for a $50,000 building which the Ancient Order of Hibernians will erect in that city.

MADISON, ILL.—Reports state that an addition will be erected to the American Car

and Foundry Company. Cost, about $190,000.

Mayville, N. Y.—Reports state that the plans prepared by Architect W. J. Beardsley, of Poughkeepsie, have been accepted by the Committee of Supervisors, for the new court house to be erected here, at a cost of $120,000.

Memphis, Tenn.—L. M. Weathers & Co., architects, Cotton Exchange Building, have completed plans for a twelve-story office building, to be erected by E. R. McGill and associates. It is to be of steel construction, and will cost about $200,000.

The Memphis Terminal Company, it is reported, will erect a depot at a cost of $5,000,000. T. E. Sullivan is general manager.

The members of the Memphis Builders' Exchange (O. O. Howard, Secretary), it is stated, are planning the forming of an organization to be known as the Memphis Builders' Exchange Building Company, for the purpose of erecting a ten-story steel building, probably in the Main and Madison districts.

Mexico, Mo.—It is reported that plans are being prepared for the erection of a $50,000 school. Wallace Dearing, City Clerk.

Milwaukee, Wis. — Reports state that plans are being prepared by Architects Hood & Tullgren for an apartment house to be erected at Milwaukee Street and Juneau Avenue, for Walter Reed and T. J. Macy. Estimated cost to be $100,000.

Kroeger Bros. have purchased the Bayley estate on Second Avenue and will erect a powerhouse and warehouse, to cost about $75,000.

Minneapolis, Minn.—It is reported that the Chicago Great Western Railway will erect a new passenger station in the vicinity of the present structure.

Bertrand & Chamberlin, architects, have started plans for factory buildings for the Self-Threading Needle Company, 709 Andrus Building, to be erected near Lake Street and Colfax Avenue South. The buildings will be three in number, of brick, three-story, 35x400. Cost, $250,000.

Montreal, Can.—Willis & Co., it is stated, are planning the erection of a ten-story piano warehouse on St. Catherine and Drummond Streets, and are having plans prepared by John James Browne & Sons.

Mt. Clemens, Mich.—The Clinton Hotel and Sanitarium Company will shortly commence the erection of a hotel with 400 rooms, 150 baths, and an auditorium to seat 1,500. Estimated cost, $1,000,000. Carl Weurzer and A. T. Fisher are largely interested.

Nashville, Tenn.—Plans and specifications are being prepared, it is stated, for an addition to be built to St. Thomas' Hospital.

Newark, O.—It is reported that plans have been completed by Vernon Reading, of Mansfield, for a $50,000 school.

New Britain, Conn.—The building committee of the First Baptist Church is considering plans by Adolph F. Leicht, of New York, for a new edifice, to cost about $40,000.

New Orleans, La.—Plans have been prepared by Architect Francis J. MacDonnell, 1013 Hennen Building, for the erection of the Palmer Memorial Church, at St. Charles and State Streets. Cost, $100,000.

Favrot & Livaudais, it is reported, are preparing plans for a $75,000 residence to be erected by Marks Isaacs.

New York, N. Y.—Mayor McClellan is reported to have announced that the city has adopted plans for the loop terminal at the Manhattan end of Brooklyn Bridge, as originally proposed by Bridge Commissioner Lindenthal, which is to be a railroad station and an office building in one. The estimated cost is approximately $8,000,000.

Plans have been filed with the Building Superintendent for a three-story public bath and gymnasium, to be erected at 342-48 East Fifty-fourth Street. Estimated cost, $200,000. Werner & Windolph, 27 West Thirty-third Street, are architects.

At the annual meeting of the Board of Directors of the Sydenham Hospital, in East One Hundred and Sixteenth Street, on November 22, Isaac Guggenheim, of 763 Fifth Avenue, announced that he would erect for the institution a new building, to cost $500,000, if the board would guarantee to him that they would obtain for the hospital an annual income of $50,000 or $60,000 a year.

George F. Pelham, architect, 503 Fifth Avenue, has prepared plans for the erection of two flat buildings, 75x87 feet and 50x88 feet, at Amsterdam Avenue and One Hundred and Eighteenth Street, at a cost of $150,000, for Felt & Malakop, 271 West One Hundred and Forty-first Street.

It is stated that bids will soon be asked by Francis J. Lantry, Fire Commissioner, for erecting an engine house at Belmont Avenue and One Hundred and Eighty-second Street, which is to cost about $60,000.

It is reported that plans have been filed for a four-story brick and stone school to be erected at Greenwich Avenue and Tenth Street for the City of New York, to cost $75,000. C. B. J. Snyder, architect, 500 Park Avenue.

Reports state that Moersch & Wille contemplate erecting from plans by John E. Scharsmith a six-story apartment house, on a plot 100x100, at the northeast corner of St. Nicholas Avenue and One Hundred and Eightieth Street, which will cost about $100,000.

Architects Parish & Schroeder filed plans for a six-story fireproof training school for women nurses, to be erected for Bellevue and the Allied Hospitals, on Twenty-sixth Street, east of First Avenue, through to Twenty-fifth Street. It is to have a frontage of 151 feet and a depth of 194.6, with façades of brick, trimmings of granite and limestone. The main floor will contain assembly and dining halls. The second will have a laboratory. There will be a roof garden, its pergola ornamented with terra-cotta columns. The building is to cost $575,000.

Plans have been filed for the enlargement of the Central Park Horticultural Gardens by the addition of eight new greenhouses and a palm house, to be built alongside the present conservatories, opposite One Hundred and Fifth Street. The greenhouses are to be 12½ feet wide and 65 feet long each, and arranged in two groups of four wings each on either side of the central palm house. They are to be of brick, trimmed with limestone, and roofed with glass.

Plans have been filed for a new five-story and basement residence to be built at Nos. 69 and 71 East Seventy-ninth Street, for Mrs. Sara Rives, wife of former Corporation Counsel George L. Rives. It is to have a frontage of 40 feet and a depth of 75 feet, with a rear extension and a façade of granite and limestone, Colonial in design, decorated with four Doric pilasters supporting the cornice of the mansard roof. It is to cost $70,000.

Bids will probably be asked about February 1 for the six-story elevator apartment house which Messrs. Bing & Bing, 198 Broadway, will erect at the northeast corner of Riverside Drive and One Hundred and Thirty-sixth Street, on a plot 100x125 feet, to cost $200,000. Schwartz & Gross, 35 West Twenty-first Street, are preparing plans.

Plans have been filed for an eight-story loft building for Thonet Bros. of Vienna, Austria, to be built at Nos. 542 and 546 West Thirty-sixth Street, of reinforced-concrete, 75 feet front, to cost $100,000, according to the estimate of Fred W. Wentworth, the architect.

Plans have been filed for an eleven-story 50-foot loft building, to be erected at Nos. 330 and 332 Fourth Avenue for Mrs. Phillipine Friedeberg, to cost $150,000, according to the estimate of the architect, Francis H. Pflieger.

Plans have been completed by Architect C. B. J. Snyder, 500 Park Avenue, for a large new school to be built on the north side of Forty-seventh Street and on the south side of Forty-eighth Street, 325 feet east of Ninth Avenue, by the Board of Education. Designs show five-story building, covering 150x201 feet. It will be built of brick, stone, and iron, fireproof, and have steam heating, electric lighting, etc. Approximate cost, $350,000.

Niagara Falls, N. Y.—It is reported that a factory building will be erected by the Pittsburg Reduction Company, estimated cost $150,000. E. S. Fickels, engineer, care of Pittsburg Reduction Company.

Norfolk, Va.—N. B. Joynes is said to be comtemplating the erection of an apartment house, five or six stories high, at Church and Queen Streets.

Plans have been completed by Architect James W. Lee, 711 Granby Street, for the erection of a six-story office building at Washington and Granby Streets. Cost, $75,000.

According to reports a brick plant will be erected by the Norfolk Brick Company at Munden Point, near this city. Cost, $125,000. C. W. Fentress, President.

North Attleboro, Mass.—Architect Newton C. Bond, of North Adams, Mass., has completed plans for a large factory building to be erected for the H. F. Burrows Company, at an estimated cost of $55,000.

Oakland, Cal.—The Board of Supervisors has passed a resolution to ask bids for $125,000 Union High School District No. 4 bonds, the proceeds to be used to erect a school.

Walter J. Mathews is reported to have prepared plans for a theatre to be erected at Twelfth and Clay Streets, at a cost of $125,000.

The citizens on November 6 are reported to have voted in favor of issuing $75,000 bonds to erect a court house.

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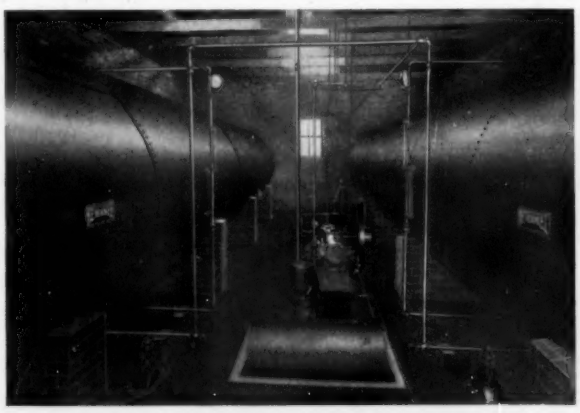

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Ocean City, Md.—The Fenwick Island Company, of Wilmington, Del., it is reported, will erect a 32-room hotel, of frame and cement, on Fenwick Island. B. Frank Wagamon, Wilmington, Del., is engineer in charge. Nathan Suplee, is president.

Omaha, Neb.—T. R. Kimball, McCague Building, is reported to be the architect for the five-story Y. W. C. A. building which is to be erected at Seventeenth Street and St. Mary's Avenue; probable cost, $100,000.

The Omaha & Council Bluffs Street Railway Company contemplate erecting a new power house at a cost of $250,000.

A new freight house will be erected by the Chicago & Northwestern. They will also make other improvements, to cost about $600,000. Edward C. Carter, of Chicago, Ill., chief engineer.

Plans are being prepared, it is stated, by the Woodmen of the World for a sanitarium. Estimated cost to be $50,000.

W. R. Homan, it is stated, will erect a modern brick apartment building at Twenty-ninth and Dodge Streets, to cost complete. $75,000.

Reports state that the Bishop Clarkson Hospital fund has reached an amount which will allow the erection of a handsome structure. Funds will continue to be raised to reach $50,000 to $75,000.

Ottawa, Can.—The Bank of Montreal, it is stated, will erect at Sommerset and Bank Streets, a six-story stone building.

Parsons, Kan.—A six-story office building is being agitated here by a company of Forest Avenue business men. Angell Matthewson will be president of the company.

Pawtucket, R. I.—The Church of Our Lady of the Consolation, in the Pleasant View section of the city, has commissioned Page & Page, architects, of Providence, to draw plans for a new church building. Father Bessette is rector of the parish. The plans will be submitted within the next month.

Peru, Ind.—S. A. Bouslog has ordered plans and will receive bids for the erection of a large business block in Oakdale, a suburb of Peru. The building will be of reinforced-concrete.

Philadelphia, Pa.—The Girard estate, it is reported, is planning the erection of a modern office building on Fifth and Chestnut Streets. Plans for the structure have been prepared by Architect J. T. Windrim.

The Trustees of the Roman Catholic High School are reported to have secured a site on Vine Street and intend erecting an addition to the school to cost $50,000.

Plans are being prepared for the erection of a sixteen-story office building, to be erected on the site of the old Hazeltine Building at 1418 Chestnut Street. Estimated cost, $2,500,000.

Bids are soon to be asked for the erection of an administration, store, public, and private ward buildings for the scarlet fever section of the Municipal Hospital in Thirty-third Ward. Estimated cost, $750,000.

Mrs. Thaddeus Norris has purchased from Horatio G. Lloyd five acres of ground near Bryn Mawr station. It is reported that she will shortly have plans prepared for a $50,000 residence to be erected on the ground.

Pittsburg, Pa.—It is reported that an addition to cost $150,000 is to be made to the Braddock General Hospital.

Press reports state that arrangements are well under way by the members of the Friendship Avenue Presbyterian Church, of which Rev. John M. Gaston is pastor, for the erection of a main auditorium to the present chapel, to cost $50,000.

Directors of the Union Trust Company are contemplating the erection of a building at Wood and Diamond Streets. A thirty-story granite and marble building is under consideration. D. H. Burnham & Co., of Chicago, Ill., are the architects.

The Board of Trustees of the West Penn Hospital has decided to buy the Friendship Park High School site for a new hospital building, to cost $500,000.

Thomas Reilly, of Philadelphia, it is announced, has secured the contract to erect St. Francis Hospital, at about $125,000.

Portland, Ore.—Plans are being prepared according to reports for the erection of an addition to the Oregon Hotel. Cost, $75,000. Address Western American Company.

Architects Whidden & Lewis, Concord Building, are said to be preparing plans for a building which is to be erected for the Commercial Club.

Port Neches, Tex.—The Texas Company will make additions and improvements to its oil refinery here, to cost $2,000,000.

Pottsville, Pa.—Plans have been prepared by Architects Seymour and Paul A. Davis, 907 Walnut Street, Philadelphia, Pa., for the new five-story Young Men's Christian Association building. Cost, $75,000.

Providence, R. I.—Local architects, it is reported, are invited to submit competitive plans for a hospital to be erected on Eaton Street. Competition closes January 10, after which drawings will be received. Probable cost, $175,000.

Regina, Sask.—The erection of a Y. M. C. A. building, to cost about $80,000, is reported under consideration.

The hospital directors contemplate raising $100,000 for the erection of a municipal institution.

Richmond, Ind.—The Y. M. C. A., it is announced, will soon let a contract for the erection of a $100,000 association building.

Richmond, Va.—Architect Chas. K. Bryant is preparing plans for a thoroughly fireproof high school building, 180x220 feet, for the city. Cost about $500,000.

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The members of the Jefferson Club are stated to be contemplating the erection of a clubhouse at a cost of $60,000.

Plans have been prepared by Ferguson & Calrow, 234 Carpenter Building, Norfolk, Va., for a hotel building, through which will run an arcade entrance to a theatre in the rear with a seating capacity of 1,200. Cost, $100,000.

A company has been formed of which Robert E. Murphy is secretary for the purpose of erecting a ten-story hotel to be known as Murphy's Hotel. Capital, $600,000.

Rock Hill, S. C.—According to reports, the Southern Power Company will expend about $3,000,000 for constructing two new power plants.

St. Joseph, Mo.—It is reported that the Chicago, Rock Island & Pacific Railroad Company (J. B. Berry, Chief Engineer, Chicago, Ill.) will erect a freight house here to cost $100,000.

St. Louis, Mo.—Mauran, Russell & Garden, architects, 1620 Chemical Building, have prepared plans for a sixteen-story addition to the National Bank of Commerce and the erection of five additional stories on the present structure. Estimated cost, $2,500,000.

H. F. Roach, 721 Olive Street, is reported to be preparing plans for an eighteen-story steel building, to be erected at Broadway and Olive Street, for W. H. Miltenberger.

Plans have been prepared for the erection of a twelve-story hotel and theatre building

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The Ely & Walker Dry Goods Building Company has applied for a permit to erect an eight-story warehouse at Sixteenth and Charles Streets, to cost $350,000. Eames & Young are the architects; James Stewart & Co., Lincoln Trust Building, are the contractors.

St. Paul, Minn.—The Minnesota Transfer Railway Company proposes building a freight depot on Charles Street, from Cleveland to Raymond Avenue, in the Midway district. It will be 100x1,400, costing $75,000.

Salt Lake City, Utah.—Reports state that the Board of Governors of the Commercial Club has called for plans for a fireproof clubhouse, 100x150 feet, to be built in the near future. It will cost about $400,000. C. M. Neuhausen, architect, 528 Dooley Block, has submitted a set of plans, but these have not been acted upon. Fish Harris is secretary.

San Francisco, Cal.—Wells, Fargo & Co. will reconstruct their building at Second and Mission Streets, at an estimated cost of $250,000. It is to be an eight-story, Class A building of steel construction.

Varney & Green have applied for a permit to erect a theatre on Ellis, near Steiner Street, to be of steel and reinforced concrete construction and cost $75,000. The Union Trust Company has also applied for a permit to repair its building on Market and Montgomery Streets, at a cost of $200,000, and S. R. Marvin to erect a three-story reinforced-concrete building at Clay and Front Streets, to cost $55,000.

Herbert and Hartley Law, it is stated, are planning the erection of a $90,000 structure on the north side of Pine Street, near Stockton.

Gustav Mann, of the Majestic Hotel, it is stated, is planning a large amusement coliseum to be erected near the Panhandle. According to the plans, this building is to cover an entire block, and will be of concrete, steel and glass construction.

Plans have been prepared by Meyer & O'Brien for a four-story hotel to be erected on the south side of Turk Street by Mrs. Charlotte Clark. Estimated cost to be $140,000.

Plans have been prepared by Architects Salfield & Kohlberg, 339 Kearney Street, for the erection of the Hotel Virginia, by the E. L. Goldstein Company, at Sutter and Gough Streets. Cost, $225,000.

Reports state that Mrs. Anna C. Spreckels has applied for a permit to have the mansion at Van Ness Avenue and Clay Street repaired and reconstructed at an approximate cost of $200,000.

Mahoney Bros. have applied to the Board of Works for a permit to reconstruct and rehabilitate the St. Francis Hotel Building at a cost of $500,000.

The Parrott estate has decided to rebuild at once on the site of the Emporium on Market Street. Estimated cost, $1,000,000.

Reports state that George D. Tay will erect a $200,000 building at O'Farrell and Powell Streets.

H. H. Bancroft, it is stated, will erect a six-story building on the site of the old History Building, at a cost of $150,000. Cunningham & Politeo, 819 Market Street, are architects.

San Jose, Cal.—The erection of a State Normal School at San Jose, to cost $300,000, is reported under consideration.

San Mateo, Cal.—It is announced that plans are being prepared for the new Peninsula Hotel. J. H. Doolittle, manager. Cost, $125,000.

Santa Rosa, Cal.—The citizens have voted to issue $280,000 bonds for the erection of a court house.

Savannah, Ga.—Owens & Sisco, Baltimore, Md., it is stated, have been engaged to prepare plans for the three-story 90x182 feet high school which it is proposed erecting at a cost of $100,000.

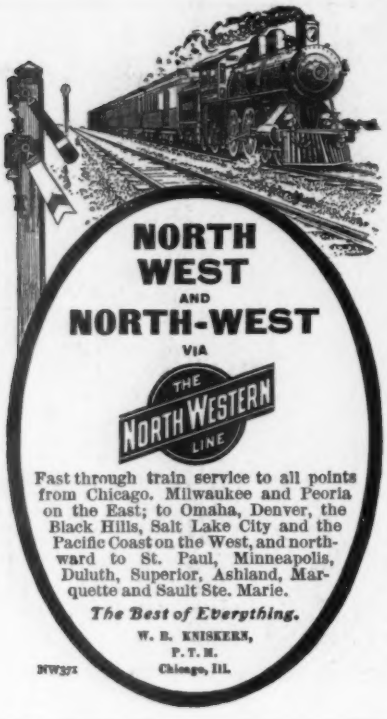
Arrangements are being completed for the erection of proposed $150,000 Masonic Temple, for which plans have been prepared by H. W. Witcover.

Seattle, Wash.—J. P. Howe, Fred J. Eltel and Hans Peterson are reported to have secured a 99-year lease on the property at Westlake Avenue and Pine Street, and propose erecting a fourteen-story theatre building, to cost $250,000.

I. Pamerantz, architect, has completed plans for a ten-story apartment building to be erected by L. H. Griffith, of the Griffith Company. It is to be erected at East Spring and East Marion Streets, at a cost of $1,400,000.

It is stated that an eastern syndicate will erect a modern hotel building on Columbia Street from Fourth to Fifth Avenues.

W. M. Neacham will erect a three-story brick apartment house on East Union Street between Thirteenth and Fourteenth Avenues, at a cost of $150,000.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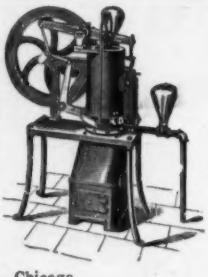

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It is reported that a $175,000 edifice will be erected by the members of the First Baptist Church.

Press reports state that the Wilson & White Company, owner of the Rainier-Grand Hotel, has secured possession of the half block immediately back of the Rainier-Grand, on which a twelve-story hotel building covering the entire ground is to be erected. Estimated cost, $750,000.

The Puget Sound Realty Association will erect a six-story hotel, to cost $70,000, on Fourth Avenue near Pike Street.

The Seattle Electric Company is reported to have taken out permits for the erection of five new fireproof buildings of concrete construction in Georgetown, to cost about $1,000,000, to be under supervision of Frank B. Gilbreth, 34 West Twenty-sixth Street, New York, N. Y.

P. C. Shannon is reported to have secured the contract for the general construction work on the $100,000 hotel which is to be erected by E. W. Herald and A. Ritzwaller at Terry Avenue and Marion Street. Saunders & Lawton, Alaska Building, are the architects.

Selma, Ala.—The Winona Portland Cement Company has been organized with a capital of $1,000,000, and will erect a plant at Epps, Ala. The cost of the plant will be about $800,000. J. P. Wetherbee is Vice-President.

Sewell's Point, Va.—Baldwin Locomotive Works, Harrison Building, Philadelphia, Pa., has secured site for exhibit building 225x125 feet, to be erected on the Jamestown Exposition grounds, to cost $100,000.

Sharon, Pa.—Plans have been completed for the Oakland Avenue Methodist Episcopal Church, and the contract will be awarded soon. Cost, $40,000.

Plans have been prepared for the congregation of St. Elizabeth's Catholic Church for the erection of a church, at South Sharon, which will cost $40,000. It will be constructed of stone. The congregation has secured a site on Wallis Avenue, and work of construction will begin next spring.

Sioux City, Ia.—The Farmers' Loan and Trust Company, in connection with other capitalists, will organize a company to erect a six-story building on the corner of Fourth and Nebraska Sreets. It is estimated that the cost will be $200,000.

South Bend, Ind.—Plans are being prepared, according to reports, for a ten-story building to be erected at Main and Washington Streets, by J. M. Studebaker, Jr.

Spokane, Wash.—The Methodists of the State of Washington, it is reported, are contemplating the erection of a $100,000 hospital. Rev. M. E. Armfield, of Spokane, may be able to give further information.

The Spokane Dry Goods Company, R. B. Paterson, president, it is stated, will erect a five-story business building in Main Avenue, between Howard and Washington Streets, to cost $50,000.

The Spokane Foundry and Structural Steel Manufacturing Company, it is stated, will build a structural steel plant here to cost from $100,000 to $150,000.

Plans have been prepared, it is stated, by Architects Dow & Hubbell, Empire State Building, for a steel frame fireproof business building for August Paulsen, at Riverside Avenue. Cost, $500,000.

The Spokane & Eastern Trust Company will erect a bank building to cost $100,000. It will be of reinforced-concrete, brick, terra-cotta, plate glass, bronze, etc. Cutter & Malmgren, architects.

Reports state that the Guardian Investment Company will erect an apartment building on Fifth Street, to cost $50,000.

I. N. Peyton, it is stated, will erect a six-story office building, to cost $165,000.

Press reports state that James J. Hogan, of New York, and Wesley Thompson, of Troy, N. Y., are planning to erect a foundry and machine shop in Spokane, to cost from $100,000 to $150,000.

Springfield, Mass.—Messrs. Robins & Oakman, 27 East Twenty-second Street, Manhattan, are architects for a $50,000 residence for Frank Wesson, of Smith & Wesson, of Springfield, to be erected on Long Hill, that city.

George A. Whitney and others, it is reported, will erect a ten-story office building at Main and Fort Streets.

Springfield, Mo.—Plans are being prepared for a city hall building on the Dead End of Robberson Avenue, between Commercial Street and railway tracks. Cost, $100,000. Address C. E. Brooks.

Spring Lake Beach, N. J.—Watson & Huckel, 1211 Walnut Street, Philadelphia, Pa., have plans for an addition to Hotel Monmouth, at Spring Lake Beach; five stories, steel, fireproof; cost, about $75,000.

Syracuse, N. Y.—Reports state that a theatre will be erected at 344-352 South Warren Street by Jules Hurtig, of New York, at a cost of $125,000.

Tacoma, Wash.—Plans have been prepared by Architects Burnham & Co., Chicago, Ill., for the erection of a six-story addition to the Fidelity Trust Company Building. Cost, $250,000.

George W. Bullard, architect, has plans for a church for the First Congregational Society, to be of cut stone, costing $40,000.

Terre Haute, Ind.—The trustees of the Indiana State Normal School, it is stated, have approved the plans for a new woman's dormitory and new library building, the aggregate cost of which is estimated at $180,000. Bids will soon be received.

Toledo, O.—George S. Mills, architect, has plans for a business building on Summit Street, between Monroe and Perry Streets, for the Bostwick-Brown Company. Estimated cost, $110,000.

It is stated that plans are being prepared by Harry Wachter, The Nasby, for a four-story brick and concrete warehouse to be erected by the Toledo Warehouse Company at Lagrange and George Streets, at a cost of $50,000.

Tompkinsville, S. I., N. Y.—H. S. Kissam, of New York, N. Y., is reported to have been engaged by F. H. Pouch, president of the American Dock and Trust Co., whose warehouses at Tompkinsville were destroyed by fire recently, to prepare plans for five warehouses. The company, it is stated, will also extend its piers. Total cost of improvement, $750,000.

Trenton, N. J.—It is reported that a resolution has been passed by the Common

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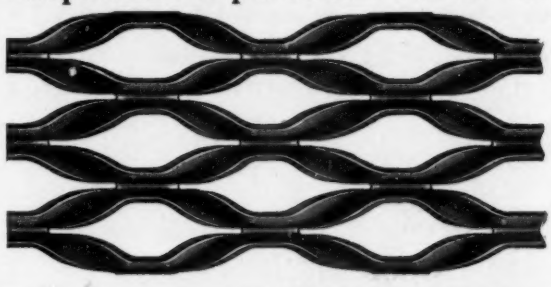

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Council authorizing the issue of $300,000 bonds for the erection of a new city hall.

A new school is to be erected here on Tyler Street, at a cost of $125,000. Harry A. Hill, 40 East State Street, is architect. Plans have been accepted.

Sketch plans for improving and enlarging the government building in Trenton, it is stated, have been approved at Washington. Congress recently appropriated $125,000 for this purpose.

UNIVERSITY STATION, ST. LOUIS, MO.—Plans for a city hall and jail, a schoolhouse and fire-engine house for University Station are being drawn by architects, and construction work will probably begin on these buildings by early next spring. They will be located according to the plan of the Board of Aldermen on the vacant block in front of the Delmar garden.

VANCOUVER, B. C.—The Council will spend $150,000 next spring on new school buildings, plans for which are now being prepared.

VICKSBURG, MISS.—The Knights of Pythias, it is stated, are considering the erection of a $50,000 building.

WABASH, IND.—According to reports, the Fraternal Order of Eagles have had plans prepared for a $50,000 lodge hall.

WASHINGTON, D. C.—The J. C. Robinson Co., New Custom House, New York, was the lowest bidder for the completion of a mess hall and dormitories at the U. S. Soldiers' Home. His bid was $728,000. It is to be a four-story brick, stone and steel building, of fireproof construction.

A permit has been issued, according to reports, to W. B. Hibbs to erect a ten-story office building at 723 Fifteenth Street, N. W., at a cost of $200,000.

Press reports state that B. Stanley Simmons, architect, 931 F Street N. W., has received the first prize for competitive plans for the new hotel to be erected at Fourteenth Street and Pennsylvania Avenue, and to be known as the Hotel Randolph. The second prize was awarded to Vogt & Melton, Washington; the third to Appleton T. Clark, Jr., and the fourth to Tormey & Leach, Baltimore, Md. The building, including site and furnishings, will cost about $1,000,000, the structure alone costing $400,000. Prof. Percy Ash, George Washington University, Washington; P. M. Gormley, James Galbery, of the Knickerbocker Hotel, New York, and Frank Wiggins, of the Imperial Hotel, New York, constituted the committee of award.

Bids are asked by Elliott Woods, Superintendent of U. S. Capital Building and Grounds, until 2 P.M., December 15, for steel framing for construction of office building for the U. S. Senate.

A permit has been granted to the Union Trust Company to erect at Fifteenth and H Streets a $500,000 building. George A. Fuller Company, Home Life Building, are the contractors; Wood, Donn & Deming, 808 Seventeenth Street N. W., the architects.

L. Morris, architect, 808 Seventeenth Street N. W., is preparing plans for a four-story brick, stone, and steel fireproof addition to the McKinley Manual Training School at Seventh and Rhode Island Avenues.

WAUSAU, WIS.—The St. Stephen's congregation has decided to erect a new church at a cost of about $45,000, and will soon commission architects to draw plans. Competition may be asked for. The building must have a seating capacity of nearly 2,000. Frederick Werhahn is pastor.

WAYCROSS, GA.—Nelson, Morris & Co., Chicago, Ill., will erect building to be used as a distributing depot. No plans have as yet been made for the building.

WEBB CITY, MO.—A. Allen Co., architects, Joplin, Mo., have completed plans for telephone exchange to be erected by the Home Telephone Company, of Joplin, Mo.; two stories high, 30x75 feet. Estimated cost, $100,000.

The Southwest Missouri Electric Railway Company is having plans prepared by F. W. Caulkins, architect, for a four or five-story office building, 75x125 feet, of brick and stone. Estimated cost, $140,000.

WESTCHESTER, PA.—Plans have been prepared by Architect W. C. Pritchett, Philadelphia, for the erection of a business building at Westchester for the First National Bank. Cost, $100,000.

WEST LIBERTY, KY.—Bids are asked by the Court House Building Committee, until 10 A.M., December 20, for the erection of a court house.

WEST SALEM, O.—The Reformed congregation, it is stated, is taking bids on a concrete block church from plans by Charles Henry & Son, of Akron.

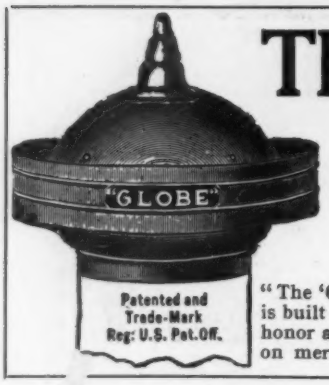
WESTVILLE, MISS.—The contract for a court house, according to plans and specifications on file with J. F. Thames, Chancery Clerk, Westville, will be awarded in December by the Board of Supervisors of Simpson County, Miss. Certified check of $300 required.

WINNIPEG, MAN.—The erection of a union depot and hotel at an estimated cost of $3,000,000 by the Grand Trunk, Canadian Pacific, Canadian Northern, and the Trans-Continental Railways is reported under consideration. H. D. Lumsden, of Ottawa, Ont., is Chief Engineer of the Trans-Continental Railway.

Press reports state that the Bank of Nova Scotia has purchased the corner of Portage and Garry Streets, opposite the Free Press Building, here, and will erect a $200,000 office building thereon.

It is reported that the Fairchild Company will erect an office and sample-room building, to cost $100,000.

YORK, PA.—It is stated that plans for the addition of the Colonial Hotel are said to be nearing completion. The improvements will cost in the neighborhood of $100,000.



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Raymond Concrete Pile Co., Chicago, Ill.

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Prometheus Electric Co., New York.

ELECTRIC SIGNALS.
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National Fireproofing Co., Pittsburgh, Pa.
Trussed Concrete Steel Co., Detroit.
Turner Construction Co., New York.
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IRONWORK (Ornamental).
Jackson, Wm. H., Co., New York.
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American Air Cleaning Co., Milwaukee, Wis.

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